UNIVERSITY OF HEALTH SCIENCES (UHS), LAHORE

MEDICAL COLLEGE APTITUDE TEST (MCAT)
UNIT WISE PAST PAPERS
(2008-2016)

Catalogued by **ALI RAZA**

ARK

2011-2016

Medical College Aptitude Test - PHYSICS

UHS, Lahore

Past Papers Unit Wise MCQs

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Table of Specification

NO.	UNIT NAME	MCQs
1.	PHYSICAL QUANTITIES AND UNITS	2
2.	FORCES	2
3.	FLUID DYNAMICS	3
4.	LIGHT	4
5.	WAVES	4
6.	DEFORMATION OF SOLIDS	2
7.	IDEAL GASES	2
8.	HEAT AND THERMODYNAMICS	3
9.	ELECTRONICS	2
10.	CURRENT ELECTRICITY	3
11.	MAGNETISM AND ELECTROMAGNETISM	3
12.	MODERN PHYSICS	7
13.	NUCLEAR PHYSICS	7
	TOTAL:	44

Contents

1 PHYSICAL QUANTITIES AND UNITS

2011

Q.1 **When the dimensions of both sides of an equation are equal, then the equation is said to be**

A) Simultaneous
B) Homologous
C) Instantaneous
D) Quadratic

Q.2 **Radian is a unit of angular displacement which can also be measured in degrees. How many radians are equal to one degree?**

A) $\frac{\pi}{180}$
B) $\frac{180}{\pi}$
C) $\frac{2\pi}{180}$
D) $\frac{\pi}{57.3}$

2012

Q.3 **Electric charge on an object is measured as 5 micro coulombs. How the value of this charge can be expressed in terms of base units:**

A) 5 x 100 ampere second
B) 5 x 10^{-6} ampere second
C) 5 x 10^{+6} coulomb second
D) 5 x 100 coulomb second

Q.4 **If 'm' is the mass, 'c' is the velocity of light and $x = mc^2$, then dimensions of 'x' will be:**

A) $[LT^{-1}]$
B) $[ML^2T^{-2}]$
C) $[MLT^{-1}]$
D) $[MLT^{-2}]$

2013

Q.5 **The wavelength ' λ' of a wave depends on the speed 'v' of the wave and its frequency 'f'. Decide which of the following is correct?**

A) $f = v\lambda$
B) $f = \frac{\lambda}{v}$
C) $f = \frac{v}{\lambda}$
D) $f = v\lambda^{-2}$

Q.6 **Name the quantity which can be measured by using base unit 'kgm^{2}s^{-3}'**

A) Weight
B) Pressure
C) Power
D) Work

2014

Q.7 **The formula for electric field strength is 'E = F/Q', where E is electric field strength and F is force and Q is charge. Which one of the following options gives the correct base units for electric field strength?**

A) $kgms^{-3}A^{-1}$
B) $kgs^{-2}A^{-3}$
C) $kg^2m^{-2}s^{-3}A$
D) $ms^{-1}A^{-3}$

Q.8 **Which set of the prefixes gives values in increasing order?**

A) Pico, Mega, Kilo, Tera
B) Pico, Micro, Mega, Giga
C) Tera, Pico, Micro, Kilo
D) Giga, Kilo, Milli, Nano

2015

Q.9 **The unit of temperature in base unit is:**

A) Celsius
B) Degree
C) Kelvin
D) Fahrenheit

Q.10 **The dimensions of pressure is:**

A) $[M^{-1}L^{2}T^{-2}]$
B) $[ML^{-1}T]$
C) $[M^{-1}L^{-2}T^{-2}]$
D) $[ML^{-1}T^{-2}]$

2016

Q.11 **The time period 'T' of a simple pendulum depends on its length 'l' and acceleration due to gravity 'g' using unit dimension. The correct equation for time period is:**

A) $T = k\sqrt{\frac{g}{l}}$ where 'k' is constant
B) $T = \frac{1}{k}\sqrt{\frac{g}{l}}$ where 'k' is constant
C) $T = k\sqrt{\frac{l}{g}}$ where 'k' is constant
D) $T = \frac{1}{k}\sqrt{\frac{l}{g}}$ where 'k' is constant

Q.12 **The unit for electric charge is Coulomb and one Coulomb in terms of base unit is equivalent to:**

A) Am
B) Js^{-1}
C) As
D) C

ANSWERS

Q.1	B	**Q.7**	A
Q.2	B	**Q.8**	B
Q.3	B	**Q.9**	C
Q.4	B	**Q.10**	D
Q.5	C	**Q.11**	**X**
Q.6	D	**Q.12**	C

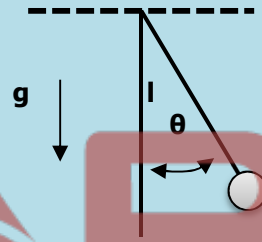
2 FORCES

2011

Q.1 **An elevator is moving upwards with constant velocity of 'v'. What is a weight of a person of a mass 'm' inside the elevator during upward motion?**

A) mg + mv
B) mg
C) mg — mv
D) zero

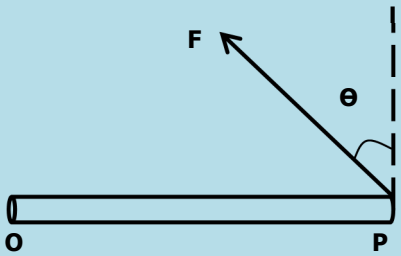
Q.2 **A simple pendulum length 'L' with bob of mass 'm' is slightly displaced from its mean position so that it string makes an angle 'θ' with vertical line as shown in the figure. Then bob of pendulum released. What will be the expression of torque with which the bob starts to move towards the mean position?**



A) mgL
B) mgL sin θ
C) 0
D) mgL cos θ

2012

Q.3 **A force 'F' is acting at point 'P' of a uniform rod capable to rotate about 'O'. What is the torque about 'O'?**



A) (OP)(F tanΘ)
B) (OP)(F)
C) (OP)(F sinΘ)
D) (OP)(F cosΘ)

Q.4 **An object of mass 'm' is suspended in an elevator moving downward with acceleration equal to acceleration due to gravity. What is the apparent weight of object?**

A) Zero
B) 2mg
C) mg
D) $\frac{mg}{2}$

2013

Q.5 **Ratio of moment of inertia of two objects 'A' and 'B' is 2:3. Which one of the following is the ratio of torques of 'A' and 'B' respectively, if both are being rotated with constant angular acceleration?**

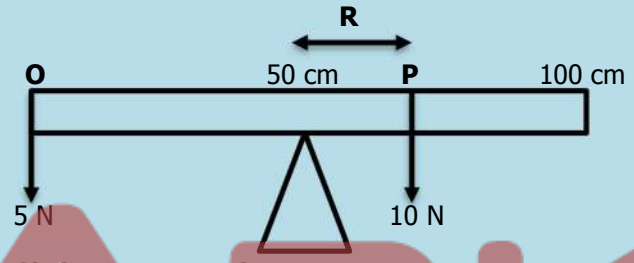
A) 3:4
B) 2:3
C) 3:2
D) 4:3

Q.6 **Due to some mechanical fault, a lift falls freely from the top of a multistory building. Which of the followings is the apparent weight of a man inside the lift, if mass of man is 80 kg while value of 'g' is 10 ms^{-2}?**

A) 900 N
B) Zero
C) 800 N
D) 700 N

2014

Q.7 **Two forces, 5 N and 10 N are acting at 'O' and 'P' respectively on a uniform meter rod suspended at the position of centre of gravity 50 cm mark as shown in the figure.**



What is the position of 'P' on meter rod?

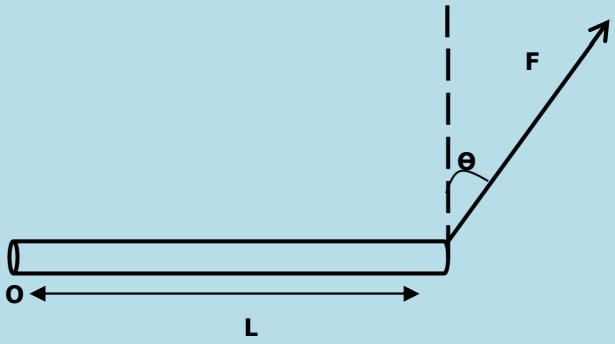
A) 80 cm
B) 75 cm
C) 70 cm
D) 65 cm

Q.8 **A 100 kg man is standing in an elevator, which accidently falls freely. What will be the weight of the person in the freely falling elevator (take g=10 m/s^2)**

A) 1000 N
B) 10 N
C) 500 N
D) Zero

2015

Q.9 **A bar of length 'L' pivoted at 'O' is acted by a force 'F' at an angle 'Θ' with vertical line as shown in figure;**



What is the moment of force?

A) L sinΘ
B) L cosΘ
C) LF cosΘ
D) LF sinΘ

Q. 10 **A body is having weight 20 N, when the elevator is descended with a = 0.1 ms^{-2}, then the value of tension 'T' is:**

A) 196 N
C) 19.8 N
C) 1.98 N
D) 2 N

2016

Q.11 **A man in elevator ascending with an acceleration will conclude that his weight is:**

A) Increased
B) Decreased
C) Reduced to zero
D) Remain Constant

Q.12 **If we double the moment arm the value of torque becomes:**

A) Half
B) Three-times
C) Two-times
D) Four-times

ANSWERS				
	Q.1	B	**Q.7**	B
	Q.2	B	**Q.8**	D
	Q.3	D	**Q.9**	C
	Q.4	A	**Q.10**	C
	Q.5	B	**Q.11**	A
	Q.6	B	**Q.12**	C

3 FLUID DYNAMICS

2011

Q.1 **An object having spherical shape of radius 'r' experiences a retarding force F from a fluid of co-efficient of viscosity 'η' when moving through the fluid with speed 'v'. What is the ratio of retarding force to speed?**

A) $6\pi\eta\ r^2$
B) $6\pi\eta/r^2$
C) $6\pi\eta\ r$
D) $6\pi\eta/r$

Q.2 **When the drag force is equal to the weight of the droplet, the droplet will fall with:**

A) High Speed
B) Low Speed
C) Certain acceleration
D) Constant Speed

Q.3 **The density of blood is:**

A) Less than water
B) Nearly equal to water
C) Greater than water
D) Three times that of water

2012

Q.4 **Stokes' Law for steady motion in a fluid of infinite extent is given by**

A) $F = 6\pi\eta rv$
B) $F = (4/3)\pi r^3\rho g$
C) $F = 6\pi\eta r^2\rho$
D) $F = 2gr^2\rho/9\eta$

Q.5 **If speed of efflux through a small hole in a large tank is 9.8 m/s. Find the height at the fluid above the hole**

A) 1 m
B) 9.8 m
C) 4.9 m
D) 19.6 m

Q.6 **Flow speed of the fluid through a non-uniform pipe increases from 1 m/sec to 3 m/sec. If change in P.E. is zero, then pressure difference between two points will be: (density of the fluid = 1000 kg/m^3)**

A) 1000 N/m^2
B) 9000 N/m^2
C) 8000 N/m^2
D) 4000 N/m^2

2013

Q.7 **Stokes' Law is given as:**

A) $F = 6\pi\eta r^2 v$
B) $F = 6\pi\eta rv$
C) $F = 6\pi\eta rv^{-1}$
D) $F = 6\pi^2\eta r^3 v$

Q.8 **The product of cross-sectional area of the pipe and the fluid speed at any point along the pipe:**

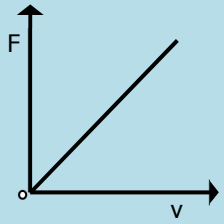
A) Remains constant
B) Is zero
C) Exponentially increases
D) Exponentially decreases

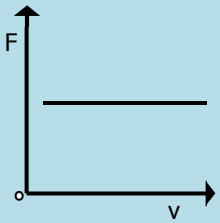
Q.9 **A small leak is developed in a large water storage tank. If the height of water above leakage is 10 m, then find the speed of efflux through the leak:**

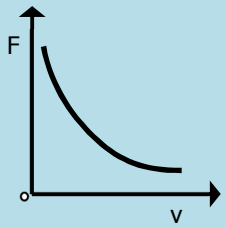
A) 14 m/sec
B) 10 m/sec
C) 9.8 m/sec
D) 20 m/sec

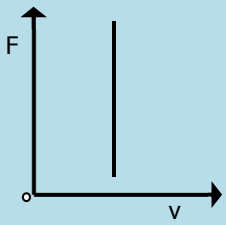
2014

Q.10 **Which of the following is the best graphical representation between drag force 'F' on a spherical object of radius 'r' and its speed 'v' through a fluid of viscosity 'η'?**

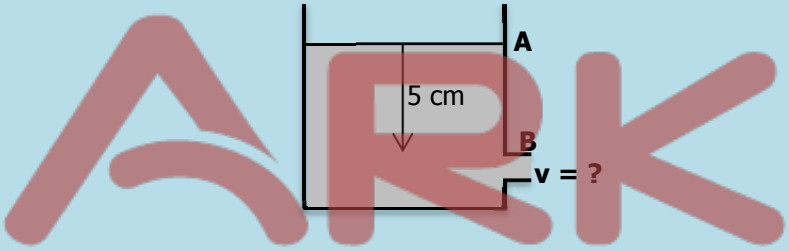
A)


C)


B)


D)


Q.11 **What is the speed of an incompressible non-viscous liquid flowing out from 'B' contained in a container as shown in the figure? Where AB = 5 m and g = 10 m/s².**



A) 5 m/s
B) 10 m/s
C) 2 m/s
D) 50 m/s

Q.12 **For the horizontal pipe, the fluid inside it is flowing horizontally then Bernoulli's equation can be written as**

A) $P + \rho v^2 = \text{constant}$
B) $2P + \rho v^2 = \text{constant}$
C) $P + 2\rho v^2 = \text{constant}$
D) $2P + 2\rho v^2 = \text{constant}$

2015

Q.13 **In fluid flow, for the equation of continuity $A_1v_1 = A_2v_2$. If velocity of the fluid at one end is doubled, then what will be the cross-sectional area at this end?**

A) Double
B) Half
C) $(\text{Half})^2$
D) $(\text{Double})^2$

Q.14 **Mass flow per second of the fluid is given by:**

A) ρAv
B) Av
C) ρv
D) $\frac{Av}{\rho}$

Q.15 **The dimension of coefficient of viscosity is:**

A) $[M^{-2}L^{-1}T^{-1}]$
B) $[ML^{-2}T^{-1}]$
C) $[ML^{-2}T^{1}]$
D) $[ML^{-1}T^{-1}]$

2016

Q.16 **When fluid is incompressible, the quantity is constant is:**

A) Mass
B) Density
C) Pressure
D) Force

Q.17 **In Bernoulli's equation the term $\frac{1}{2}\rho v^2$ is called:**

A) K.E. per unit volume
B) K.E.
C) K.E. per unit area
D) K.E. per unit length

Q.18 **Potential energy per unit volume is given by:**

A) mgh
B) $\frac{mgh}{\rho}$
C) gh
D) ρgh

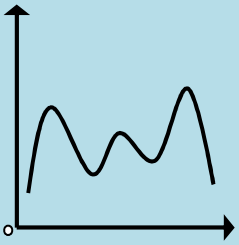
ANSWERS

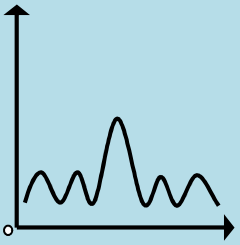
Q.1	B	**Q.7**	B	**Q.13**	B
Q.2	D	**Q.8**	A	**Q.14**	A
Q.3	B	**Q.9**	A	**Q.15**	D
Q.4	A	**Q.10**	A	**Q.16**	B
Q.5	C	**Q.11**	B	**Q.17**	A
Q.6	D	**Q.12**	B	**Q.18**	D

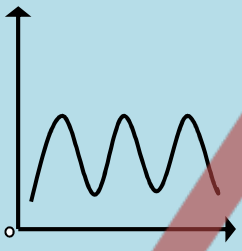
4 LIGHT

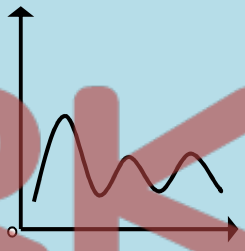
2011

Q.1 **A monochromatic light of wavelength 'λ' is used to produce the diffraction pattern through a single slit of width X. Which one of the following represents the intensity distribution across the screen?**

A) 

C) 

B) 

D) 

Q.2 **For interference of light waves to take place, the required condition is**

A) The path difference of the light waves from the two sources must be large
B) The interfering waves must be non-coherent
C) The light waves may come from different sources
D) The light waves may come from two coherent sources

Q.3 **The property of bending of light around an obstacle and spreading of light waves into geometric shadow of an obstacle is called:**

A) Diffraction
B) Polarization
C) Quantization of Light
D) Interference of Light

Q.4 **The normal human eye can focus a sharp image of an object on the eye if the object is located at certain distance called**

A) Least Point
B) Near Point
C) Far Point
D) Distinct Point

2012

Q. 5 **Polarization of light exhibited the nature of light as**

A) Longitudinal wave
B) Compressional wave
C) Transverse wave
D) Electromagnetic wave

Q.6 **The concentration of a sugar solution can be determined by**

A) Un-polarized light
B) Plane polarized light
C) Interference of light
D) Diffraction of light

Q.7 **The information from one place to another can be transmitted very safely and easily by:**

A) Copper wire
B) Aluminium wire
C) Photodiode
D) Optical fibre

Q.8 **The image of an object placed inside the focal length of a convex lens will be largest and clearest when it is at the**

A) Less than 25 cm
B) Near point
C) Greater than 25 cm
D) Infinity

2013

Q.9 **The minimum distance from the eye at which an object can be seen clearly without strain is called:**

A) Focal point
B) Near point
C) Yield point
D) Far point

Q.10 **In the diffraction of light around an obstacle, the angle of diffraction is increased then:**

A) The wavelength of incident light wave is increased
B) The wavelength of incident light wave is decreased
C) The amplitude of the incident light wave is increased
D) The amplitude of the incident light wave is decreased

Q.11 **An object 15 cm from a lens produces a real image 30 cm from the lens. What is the focal length of the lens?**

A) +15 cm
B) +20 cm
C) +10 cm
D) +25 cm

Q.12 **What is the formula for critical angle in case of light through two mediums having refractive indexes n_1 and n_2 such that $n_1 > n_2$?**

A) $\sin^{-1}\left(\frac{n_1}{n_2}\right)$
B) $\cos^{-1}\left(\frac{n_1}{n_2}\right)$
C) $\cos^{-1}\left(\frac{n_2}{n_1}\right)$
D) $\sin^{-1}\left(\frac{n_2}{n_1}\right)$

2014

Q.13 **An oil film floating on water surface exhibits colour pattern due to the phenomenon of:**

A) Diffraction
B) Polarization
C) Interference
D) Surface tension

Q.14 **The value of the least distance of distinct vision or near point is _____ for a normal human eye.**

A) 20 cm
B) 25 cm
C) 10 cm
D) 15 cm

Q.15 **In a compound microscope, the magnification by objective = 20, magnification by eyepiece = 11, then the total magnification is**

A) M = -220
B) M = -0.19
C) M = -0.05
D) M = 220

Q.16 **The distance between atoms is 0.30 nm. What will be the wavelength of X-rays at angle $\theta = 30^o$ for 1st order diffraction?**

A) λ = 0.60 nm
B) λ = 0.30 nm
C) λ = 0.20 nm
D) λ = 0.90 nm

2015

Q.17 **The value of least distance vision for normal eye is**

A) 20 cm
B) 30 cm
C) 25 cm
D) 40 cm

Q.18 **The distance between two dark adjacent fringes is mathematically written as:**

A) $\Delta Y = \frac{\lambda L}{d}$

B) $\Delta Y = \frac{\lambda}{dL}$

C) $\Delta Y = \frac{\lambda d}{L}$

D) $\Delta Y = \frac{d}{\lambda L}$

Q.19 **In Young's Double Slit Experiment, slit separation x = 0.05 cm, distance between screen and slit D = 200 cm, fringes separation x = 0.13 cm, then the wavelength 'λ' of light is:**

A) $\lambda = 1.23 \times 10^{-2}$ m

B) $\lambda = 3.25 \times 10^{-7}$ m

C) $\lambda = 4.55 \times 10^{-5}$ m

D) $\lambda = 5.1 \times 10^{-7}$ m

Q.20 **In normal adjustment of compound microscope, the eye piece is positioned so that the final image is formed at:**

A) Optical Center

B) Infinity

C) Principle Focus

D) Near Point

2016

Q.21 **The minimum distance from the eye at which an object appears to be distant is:**

A) 25 cm

B) 22 cm

C) 35 cm

D) 20 cm

Q.22 **Using the relation for the magnifying power L_o, M = 1 + d/f, if f = 5 cm and d = 25 cm then M will be:**

A) 5

B) 7

C) 6

D) 8

Q.23 **If general equation for destructive interference's is given by the relation,**

$$\text{Optic path difference} = \left(m + \frac{1}{2}\right)\lambda$$

where 'm' is an integer, then first dark fringe appears from 'm' will be equal to:

A) $\frac{2}{3}$

B) $\frac{1}{2}$

C) 0

D) 1

Q.24 **For bright fringe formation, the path difference is:**

A) $\left(n + \frac{1}{2}\right)\lambda$ where n = 0, 1, 2, ...

B) $n\lambda$ where n = 0, 1, 2, ...

C) $(2n + 1)\frac{\lambda}{2}$ where n = 0, 1, 2, ...

D) $\left(\frac{n + 1}{2}\right)\lambda^2$ where n = 0, 1, 2, ...

ANSWERS								
	Q.1	C	**Q.7**	D	**Q.13**	C	**Q.19**	B
	Q.2	D	**Q.8**	B	**Q.14**	B	**Q.20**	D
	Q.3	A	**Q.9**	B	**Q.15**	D	**Q.21**	A
	Q.4	B	**Q.10**	A	**Q.16**	B	**Q.22**	C
	Q.5	C	**Q.11**	C	**Q.17**	C	**Q.23**	C
	Q.6	B	**Q.12**	D	**Q.18**	A	**Q.24**	B

5 WAVES

2011

Q.1 **A source of sound wave emits waves of frequency 'f'. If 'v' is speed of sound waves, then what will be the wavelength of the waves**

A) $\frac{v}{f}$

B) vf

C) $\frac{v - u_o}{f}$

D) $(v - u_o)f$

Q.2 **The spectrum of a star's light is measured and the wavelength of one of the lines as the sodium's line is found to be 589 nm. The same line has the wavelength of 497 nm when observed in the laboratory. This means the star is**

A) Moving away from the earth

B) Moving towards the north

C) Stationary

D) Revolving around the planet

Q.3 **What is the period of mass spring system during SHM if the ratio of mass to spring constant is ¼?**

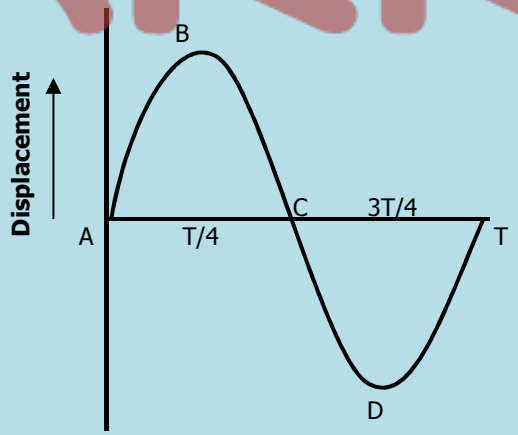
A) π

B) 2 π

C) 1/π

D) ½ π

Q.4 **Waveform of SHM is given in figure. At what time/times displacement is equal to zero?**



A) T/4 only

B) 3T/4 only

C) 0, T/4, 3T/4 and T

D) 0, T/2 and T

2012

Q.5 **A simple harmonic oscillator has a time period of 10 seconds. Which equation rotates its acceleration 'a' and displacement 'x'?**

A) a = -2 x

B) a = -(20π)x

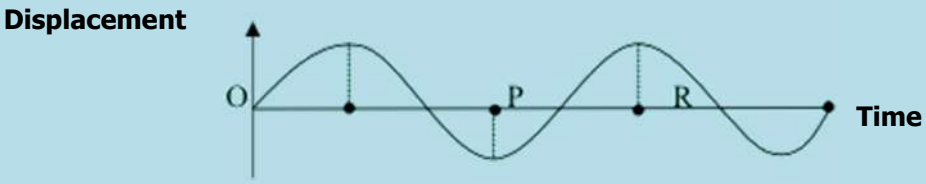
C) $a = -\left(\frac{2\pi}{10}\right)^2 x$

D) $a = -(20\pi)^2 x$

Q.6 **When the length of a simple pendulum is doubled, find the ratio of the new frequency to the old frequency?**

A) 1/4
B) 1/2
C) $\sqrt{2}$
D) $1/\sqrt{2}$

Q.7 **In the diagram below, the displacement of an oscillating particle is plotted against time. What does the length 'PR' on the time axis represents?**



A) Twice the frequency
B) Half the period
C) Half the frequency
D) Twice the period

Q.8 **When the source of sound moves towards the stationary observer, the value of apparent frequency 'f_o' is:**

A) $f_o = \left(\frac{v+u_i}{v}\right) f$
B) $f_o = \left(\frac{v}{v-u_i}\right) f$
C) $f_o = \left(\frac{v}{v+u_i}\right) f$
D) $f_o = \left(\frac{v-u_i}{v}\right) f$

2013

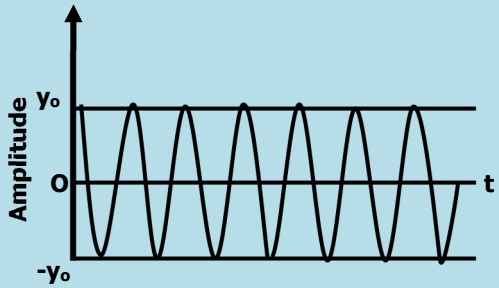
Q.9 **For vibrating mass-spring system, the expression of kinetic energy at any displacement 'x' is given by:**

A) $\frac{1}{2} kx_o^2 \left(1- \frac{x^2}{x_o^2}\right)$
B) $\frac{1}{2} kx_o^2$
C) $\frac{1}{2} m\omega \left(1- \frac{x^2}{x_o^2}\right)$
D) $\frac{1}{2} m\omega^2 x_o$

Q.10 **Speed of sound through a gas is measured as 340 m/s at pressure P_1 and temperature T_1. What will be the speed of sound if pressure of gas is doubled but temperature is kept constant?**

A) 342 m/s
B) 340 m/s
C) 170 m/s
D) 680 m/s

Q.11 **Variation of amplitude with respect to time for an oscillation object is shown in figure.**



Identify the oscillation:

A) Damped
B) Critical
C) Undamped
D) Heavily damped

Q.12 **In a simple harmonic motion with a radius 'x_o', the velocity of the particle at any point is:**

A) $v = \omega\sqrt{x_o^2 - x^2}$
B) $v = \omega(x^2 - x_o^2)$
C) $v = \omega\sqrt{(x_o - x)}$
D) $v = \omega\sqrt{(x - x_o)}$

2014

Q.13 **Frequency of simple pendulum of length 9.8 m will be**

A) 2 π Hertz
B) π/2 Hertz
C) 1/2π Hertz
D) π/4 Hertz

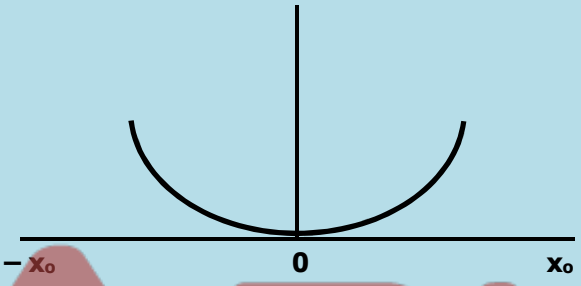
Q.14 **A body performs simple harmonic motion with a period of 0.063 s. The maximum speed of 3.0 ms^{-1}. What are the values of the amplitude 'x_o (m)' and angular frequency 'ω ($rads^{-1}$)'?**

A) $x_o = 0.03, \omega = 100$
B) $x_o = 0.19, \omega = 16$
C) $x_o = 5.3, \omega = 16$
D) $x_o = 3.3, \omega = 100$

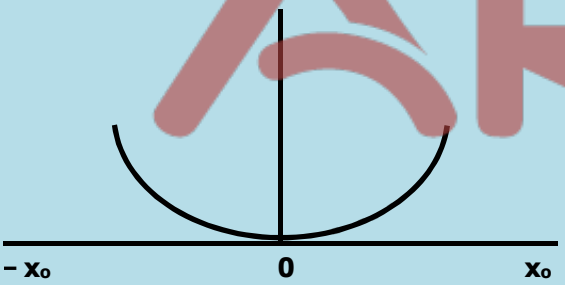
Q.15 **Food being cooked in microwave oven is an example of**

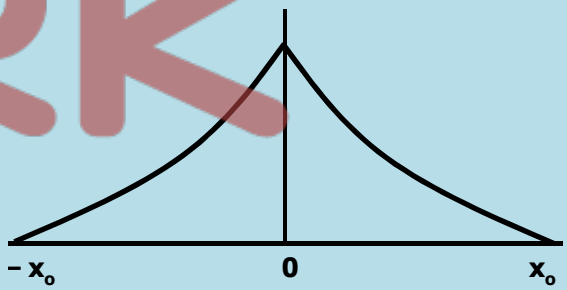
A) Beats
B) Overtones
C) Resonance
D) Stationary waves

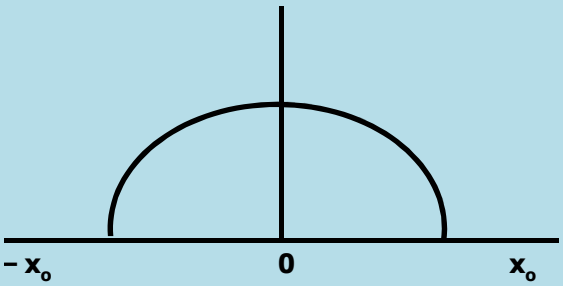
Q.16 **Potential energy of a mass spring system with respect to displacement during simple harmonic motion (SHM) is shown in the figure.**

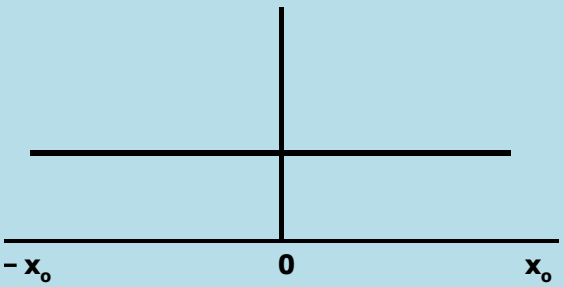


Which of the following represents the total energy of mass spring system during SHM?

A)


C)


B)


D)


2015

Q.17 **Mathematical formula of maximum velocity (v_o) for a body executing simple harmonic motion is:**

A) $v_o = \omega x_o$
B) $v_o = \frac{k}{m}\sqrt{x_o^2 - x^2}$
C) $v_o = v\sqrt{1 - \frac{x^2}{x_o^2}}$
D) $v_o = m\sqrt{x_o^2 - x^2}$

Q.18 **What should be the length of simple pendulum whose period is 6.28 second at a place where g = 10 ms^{-2}.**

A) 0.28 m
B) 10.8 m
C) 6.28 m
D) 10 m

Q.19 **What should be the ration of kinetic energy to total energy for simple harmonic oscillator?**

A) $1 - \frac{x^2}{x_o^2}$
B) 1
C) $(x_o^2 - x^2)$
D) $\frac{1}{2} x^2$

Q.20 **An observer moves with velocity 'v_o' toward a stationary source, then the number of waves received in one second is:**

A) $f' = f\left(\frac{v}{v + v_o}\right)$
B) $f' = f\left(\frac{v}{v - v_o}\right)$
C) $f' = f\left(\frac{v + v_o}{v}\right)$
D) $f' = f\left(\frac{v - v_o}{v}\right)$

2016

Q.21 **Resonance occurs when the driving frequency is:**

A) Greater than natural frequency
B) Unequal the natural frequency
C) Less than natural frequency
D) Equal to the natural frequency

Q.22 **The red shift measurement of Doppler effect of galaxies indicate that the universe is:**

A) Expanding
B) Contracting
C) Stationary
D) Oscillating

Q.23 **Frequency audible range to human hearing lies in the range:**

A) 2-2000 kHz
B) 15-50000 kHz
C) 20-20000 Hz
D) 20-20000 kHz

Q.24 **Tuning a radio is a best example of:**

A) Natural resonance
B) Mechanical resonance
C) Free resonance
D) Electrical resonance

ANSWERS								
	Q.1	A	**Q.7**	B	**Q.13**	C	**Q.19**	A
	Q.2	A	**Q.8**	B	**Q.14**	A	**Q.20**	C
	Q.3	A	**Q.9**	D	**Q.15**	C	**Q.21**	D
	Q.4	D	**Q.10**	A	**Q.16**	D	**Q.22**	A
	Q.5	C	**Q.11**	C	**Q.17**	A	**Q.23**	C
	Q.6	D	**Q.12**	B	**Q.18**	D	**Q.24**	D

6 DEFORMATION OF SOLIDS

2011

Q.1 **A wire is stretched by a force which causes an extension. The energy is stored in it only when:**

A) Extension of wire is proportional to force applied
B) The cross-section area of the wire remains constant
C) The wire is not stretched beyond its elastic limit
D) The weight of wire is negligible

Q.2 **Which statement is correct:**

A) Elasticity is that property of body which enables body to regain its original dimension
B) Elasticity is that property of a body that does not allow it to return to its original shape
C) Elasticity is that property of a body that allows it to retain its original shape and dimension after the stress is removed.
D) Elasticity is that property of a body that obeys Hooke's law.

2012

Q.3 **The ratio of tensile strength to tensile strain is called**

A) Modulus of elasticity
B) Bulk Modulus
C) Young's Modulus
D) Shear Modulus

Q.4 **A wire is stretched by a force 'F' which causes an extension Δl, the energy stored in the wire is:**

A) FΔl
B) 2FΔl
C) ½ FΔl^2
D) ½ FΔl

2013

Q.5 **The stress-strain graph, deduced the following limits successively:**

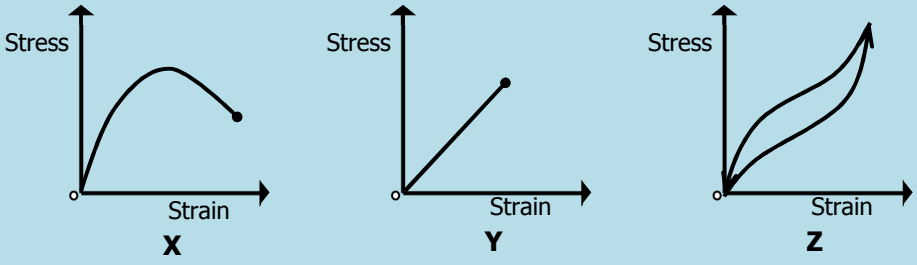
A) Proportional limit, yield limit, elastic limit
B) Yield limit, elastic limit, proportional limit
C) Proportional limit, elastic limit, yield limit
D) Elastic limit, proportional limit, yield limit

Q.6 **A 4.0 m long wire is subjected to stretching force and its length increases by 40 cm. The percent elongation which the wire undergoes is:**

A) 0.10 %
B) 40 %
C) 10 %
D) 20 %

2014

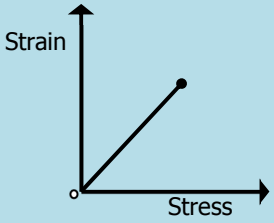
Q.7 **Three graphs for three types of materials are shown in the figure.**



Which row describes the correct materials?

	X	Y	Z
A)	Brittle	Ductile	Polymer
B)	Brittle	Polymer	Ductile
C)	Polymer	Brittle	Ductile
D)	Ductile	Brittle	Polymer

Q.8 **Which feature of the following graph represents Young's Modulus?**



A) Area under graph
B) Gradient of the graph
C) Reciprocal of the gradient
D) Product of gradient and area of the curve.

2015

Q.9 **Strain energy in a deformed energy is stored in the form of:**
A) Elastic Energy
B) Potential Energy
C) Plastic Energy
D) Kinetic Energy

Q.10 **A wire of area of cross section 'A' and original length 'l' is subjected to a load 'L'. A second wire of same material with an area is '2A' and length '2l' is subjected to the same load 'L'. If the extension in first wire is 'X' and second wire is 'Y', find the ratio 'X/Y'.**
A) $\frac{1}{4}$
B) $\frac{1}{2}$
C) $\frac{1}{1}$
D) $\frac{2}{1}$

2016

Q.11 **The ratio of applied stress to the volumetric strain is called:**
A) Bulk Modulus
B) Shear Modulus
C) Tensile modulus
D) Young's Modulus

Q.12 **The wire made of copper belong to which specific kind of material:**
A) Ductile material
B) Tough material
C) Brittle material
D) Deformed material

ANSWERS				
	Q.1	A	**Q.7**	D
	Q.2	C	**Q.8**	C
	Q.3	C	**Q.9**	B
	Q.4	D	**Q.10**	C
	Q.5	C	**Q.11**	A
	Q.6	C	**Q.12**	A

7 IDEAL GASES

2011

Q.1 **Which of the following is the expression of root mean square speed of a gas having n number of molecules contained in the container?**

A) $\sqrt{\frac{v_1^2+ v_2^2+...+ v_x^2}{N}}$

B) $\frac{v_1^2+ v_2^2+...+ v_x^2}{N}$

C) $\sqrt{\frac{v_1+ v_2+...+ v_x}{N}}$

D) $\frac{v_1+ v_2+...+ v_x}{N}$

Q.2 **For a gas of volume V in its equilibrium state, if the pressure does change with time then total kinetic energy of gas is constant because**

A) Collisions between gas molecules occur

B) Collisions between gas molecules occur linearly

C) Collisions must be elastic

D) Collisions must be inelastic

2012

Q.3 **H_2 and O_2 both are at thermal equilibrium at temperature 300 K. Oxygen molecule is 16 times massive than hydrogen. Root mean square speed of hydrogen is**

A) 4 root mean square of oxygen

B) ¼ root mean square of oxygen

C) 1/16 root mean square of oxygen

D) 1/6 root mean square of oxygen

Q.4 **Which of the following is expression of mean square speed of 'N' gas molecules contained in a cylinder?**

A) $\frac{v_1+ v_2+...+ v_x}{N}$

B) $\frac{v_1^2+ v_2^2+...+ v_x^2}{N}$

C) $\sqrt{\frac{v_1+ v_2+...+ v_x}{N}}$

D) $\sqrt{\frac{v_1^2+ v_2^2+...+ v_x^2}{N}}$

2013

Q.5 **What is the value of universal gas constant?**

A) 8314 $Jmol^{-1}K^{-1}$

B) 83.14 $Jmol^{-1}K^{-2}$

C) 831.4 $Jmol^{-1}K^{-1}$

D) 8.314 $Jmol^{-1}K^{-2}$

Q.6 **A gas sample contains three molecules each having speed 1 ms^{-1}, 2 ms^{-1}, 3 ms^{-1}. What is the mean square speed?**

A) 14/3 m/s

B) 6 m/s

C) 2 m/s

D) $\sqrt{14/3}$ m/s

2014

Q.7 **A gas containing 'N' number of molecules of a gas having mass of each molecule 'm' is in a cubic container having length of each side 'a'. What is the density of gas contained in cube?**

A) N/a^2

B) m/a^3

C) Nm/a^3

D) Na^3/m

Q.8 **In 'General Gas Equation PV=nRT', 'n' represents the number of moles of gas. Which of the following represents the relation of 'n'?**

A) $n = NN_A$
B) $n = N/N_A$
C) $n = N_A/N$
D) $n = N + N_A$

2015

Q.9 **Two sample of gases '1' and '2' are taken at same temperature and pressure but the ratio of number of their volume is $V_1:V_2 = 2:3$. What is the ration of number of moles of the gas sample?**

A) 3:2
B) $\sqrt{2}:\sqrt{3}$
C) 4:9
D) 2:3

Q.10 **Root mean square velocity of a gas having pressure 'P' and density 'ρ' is given by:**

A) $\sqrt{\frac{3P}{\rho}}$
B) $\frac{3P}{\rho}$
C) $\sqrt{\frac{3\rho}{P}}$
D) $\frac{3\rho}{P}$

2016

Q.11 **The relation $\frac{R}{N_A} = 1.38 \times 10^{-25}\ JK^{-1}$ in a gas law is known as:**

A) Avogadro's constant
B) Charles constant
C) Newton's constant
D) Boltzmann's constant

Q.12 **The relation 'PV = nRT' shows which law of physics:**

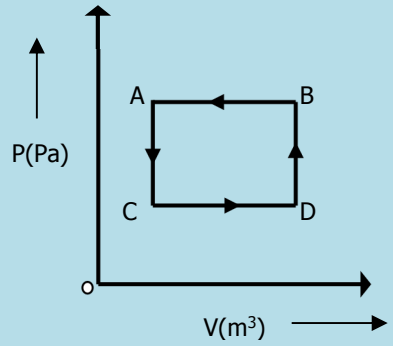
A) Charles Law
B) Avogadro's Law
C) Newton's Constant
D) Ideal Gas Law

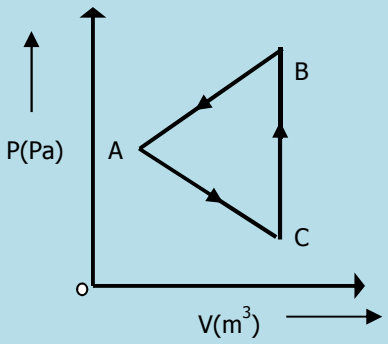
ANSWERS				
	Q.1	A	**Q.7**	C
	Q.2	C	**Q.8**	B
	Q.3	A	**Q.9**	D
	Q.4	A	**Q.10**	A
	Q.5	B	**Q.11**	D
	Q.6	A	**Q.12**	D

8 HEAT AND THERMODYNAMICS

2011

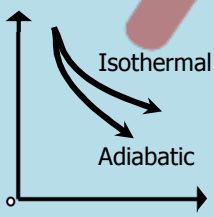
Q.1 **In which of the following, the change in internal energy is more?**



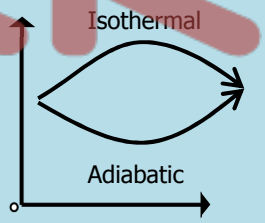


A) In system A
B) In system B
C) Cannot be predicted
D) Change is zero in both. (both are cyclic)

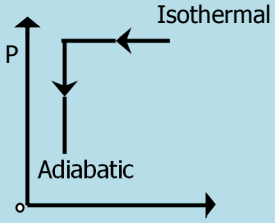
Q.2 **Pressure volume graph of two systems 'A' and 'B' are plotted under isothermal and adiabatic conditions. Which of the following observation of graph represents the two systems?**



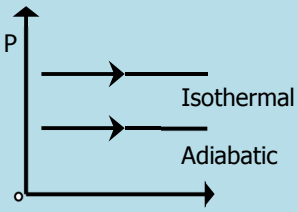
A)



C)

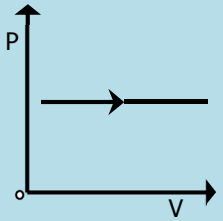


B)

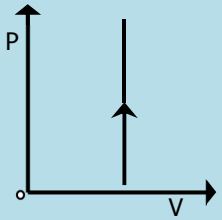


D)

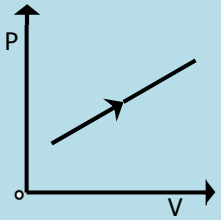
Q.3 **Which of the following curve is an isotherm?**



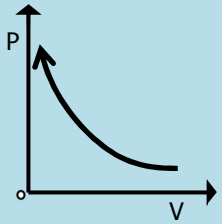
A)



B)



C)



D)

2012

Q.4 **If 'Q' is the amount of heat supplied to a system and 'W' is the work done, then change in internal energy can be defined as**

A) Q/W
B) Q – W
C) W/Q
D) 1 + Q/W

Q.5 **A heat engine operating according to second law of thermodynamics rejects one fourth of the heat taken from high temperature reservoir. What is the percentage efficiency of heat engine?**

A) 100%
B) 25%
C) 50%
D) 75%

Q.6 **First law of thermodynamics under adiabatic conditions can be mathematically written as:**

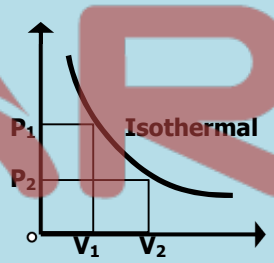
A) Q = W
B) Q = ΔU
C) Q = U + W
D) W = – ΔU

2013

Q.7 **What is the factor upon which change in internal energy of an ideal gas depends?**

A) Change in volume
B) Change in temperature and volume
C) Change in temperature
D) Path followed to change internal energy

Q.8 **What will be the mathematical form of first law of thermodynamics for a system whose variation of volume by pressure is shown?**



A) Q = U
B) U = W
C) Q = U/W
D) Q = W

Q.9 **For a heat engine 'A' ratio of Q_1 to Q_2 is 2/3 while that of heat engine 'B', ratio of Q_2 to Q_1 is 1/3. What is the value $\eta_A : \eta_B$?**

A) 1:3
B) 1:2
C) 2:3
D) 2:1

2014

Q.10 **At triple point of water, the pressure of gas is 2680 Pa, by changing 'T' the pressure increases to 4870 Pa. Then 'T' is:**

A) 496.38 K
B) 438.96 K
C) Zero
D) 496.38 °F

Q.11 **The relation between Celsius and Fahrenheit scales is:**

$$\frac{C}{100} = \frac{F - 32}{180}$$

At what temperature both scales give the same reading?

A) -100°
B) -40°
C) -180°
D) -273°

Q.12 **A heat engine working according to second law of thermodynamics has 50% efficiency. What will be the temperature of its low temperature reservoir if high temperature reservoir is 327 °C?**

A) 27 °C
B) 127 °C
C) 300 °C
D) 600 °C

2015

Q.13 **When the rate of gas changes without change in temperature, the gas is said to undergo:**

A) Isothermal Process
B) Adiabatic Process
C) Isochoric Process
D) Isobaric Process

Q.14 **What is the 273 K on the Celsius scale of temperature?**

A) 0.15 °C
B) 273.15 °C
C) -0.15 °C
D) -273.15 °C

Q.15 **If heat 'Q_1' is absorbed at temperature 'T' and heat 'Q_2' is absorbed at temperature of triple point of water, then unknown temperature of system (in K) is:**

A) 273.16
B) 273.16 Q_2/Q_1
C) 273.16 Q
D) 273.16 Q_1/Q_2

2016

Q.16 **The rapid escape of air from a burst tyre is an example of:**

A) Adiabatic processes
B) Isothermal process
C) Cooling process
D) First law of thermodynamics

Q.17 **Which relation exactly described the isothermal process?**

A) Q = W
B) W = − ΔU
C) Q = − ΔU
D) Q = ΔU + W

Q.18 **If a turbine is working as a heat engine and takes that from hot body (427 °C) and exhausts into a body at 77 °C then what is the possible efficiency?**

A) 50%
B) 70%
C) 90%
D) 95%

ANSWERS						
	Q.1	D	**Q.7**	C	**Q.13**	A
	Q.2	A	**Q.8**	D	**Q.14**	C
	Q.3	D	**Q.9**	B	**Q.15**	D
	Q.4	B	**Q.10**	A	**Q.16**	A
	Q.5	D	**Q.11**	B	**Q.17**	A
	Q.6	D	**Q.12**	A	**Q.18**	A

9 ELECTRONICS

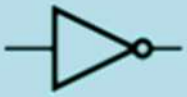
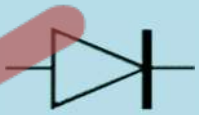
2011

Q.1 **Which of the following is the proper way to study the sinusoidal waveform of the voltage?**
A) Voltage is connected to X input and the time base is switched off
B) Voltage is connected to Y input and the time base is switched on
C) Voltage is connected to Y input and the time base is switched off
D) Voltage is connected to X input and the time base is switched on

Q.2 **Electron gun in cathode ray oscilloscope contains**
A) Filament, cathode, grid, anode
B) Cathode, anode, capacitor, screen
C) Emitter, base, collector
D) Resistance, capacitor, inductor

2012

Q.3 **What is the logic symbol for a NOT Gate?**

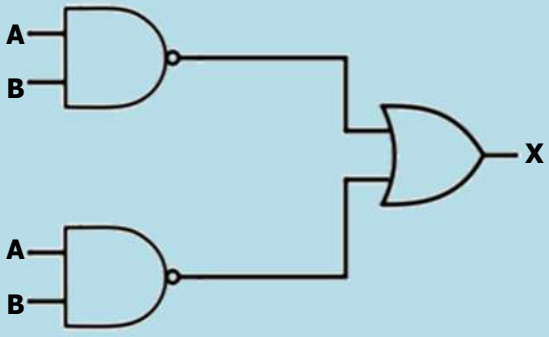
A)  B)  C)  D) 

Q.4 **The voltage that is applied across X-plates is provided by a circuit called**
A) Audio generator
B) Time base generator
C) Signal generator
D) Linear generator

2013

Q.5 **Which of the following is the proper way to study the sinusoidal wave form of voltage?**
A) Voltage is connected to 'Y' input and time base is switched on.
B) Voltage is connected to 'X' input and time base is switched off.
C) Voltage is connected to 'Y' input and time base is switched off.
D) Voltage is connected to 'X' input and time base is switched on.

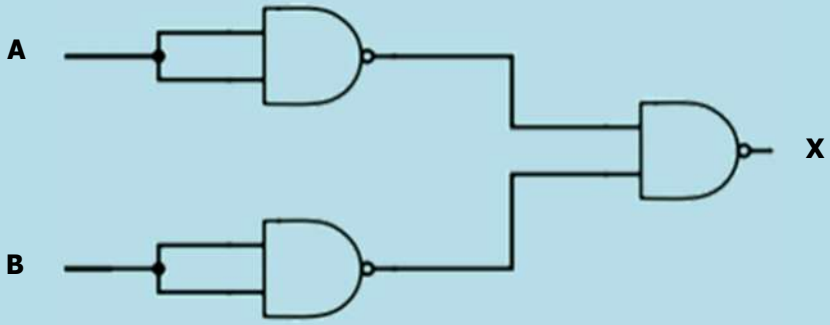
Q.6 **What is the output Boolean expression of logic diagram shown in figure below:**



A) $(\overline{\overline{A} + B}).(\overline{\overline{A} + B})$
B) $(\overline{A} + \overline{B})(\overline{A} + \overline{B})$
C) $\overline{A}.\overline{B} + \overline{A}.\overline{B}$
D) $\overline{A}\overline{B} + \overline{A}\overline{B}$

2014

Q.7 **Three NAND gates are connected as shown in the figure.**



Which of the following logic gate is formed in the connected circuit?

A) OR
B) AND
C) NOR
D) NAND

Q.8 **What is the output of the truth table?**

A	B	Output x = AB + AB
0	0	
0	1	
1	0	
1	1	

A)

X
0
0
1
1

C)

X
1
0
0
1

B)

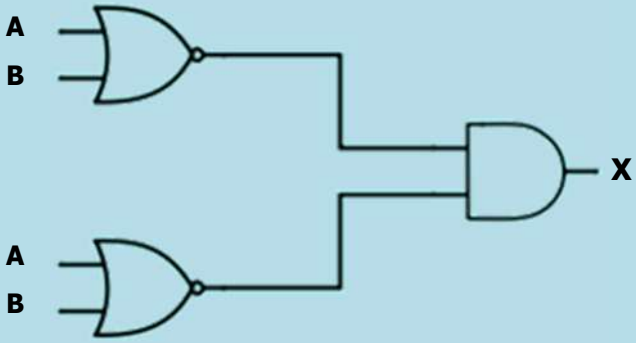
X
1
1
1
0

D)

X
0
1
1
1

2015

Q.9 **If the fundamental logic gates are connected as:**



What are the mathematical notation for this logic gate?

A) $(\overline{A + B}).(A + B)$
B) $(\overline{A + B}).(\overline{A + B})$
C) $(\overline{A + B})(\overline{A + B})$
D) $\overline{AB} + \overline{AB}$

Q.10 **Which of the following is the truth table for the logic gate;**

A)

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

C)

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	1

B)

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

D)

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

2016

Q.11 **Which one of the following is the Boolean expression of NAND gate?**

A) $X = A.B$

B) $X = A + B$

C) $X = \overline{A.B}$

D) $X = \overline{A + B}$

Q.12 **Which one of the following is the truth table of NAND gate?**

A)

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

C)

A	B	Y
0	1	1
1	1	0

B)

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

D)

A	B	Y
0	0	0
1	1	1

ANSWERS				
	Q.1	B	**Q.7**	A
	Q.2	A	**Q.8**	A
	Q.3	A	**Q.9**	B
	Q.4	B	**Q.10**	A
	Q.5	A	**Q.11**	C
	Q.6	D	**Q.12**	B

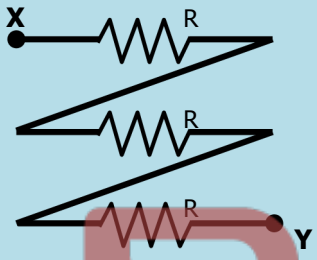
10 CURRENT ELECTRICITY

2011

Q.1 **If 2 A current passes through a resistor when connected to a certain battery. If the resistance is replaced by the double resistance, then the current will become**

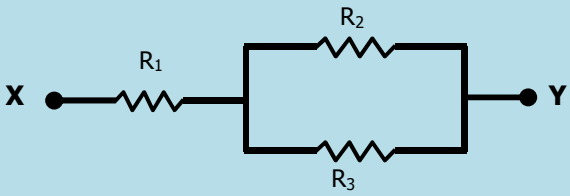
A) 2 A
B) 4 A
C) 6 A
D) 1 A

Q.2 **Three resistors each having value 'R' are connected as shown in figure. What is the equivalence resistance between 'X' and 'Y'?**



A) 3R
B) R
C) R/3
D) R^3

Q.3 **Three resistors of resistance R_1, R_2 and R_3 are connected as shown in figure. Equivalence resistance is:**



A) $R_1+R_2+R_3$
B) $\frac{R_1+R_2+R_3}{R_1 R_2}$
C) $\frac{R_1R_2+R_2R_3+R_2R_3}{R_1+R_2}$
D) $\frac{R_1 R_2 R_3}{R_2 R_3}$

2012

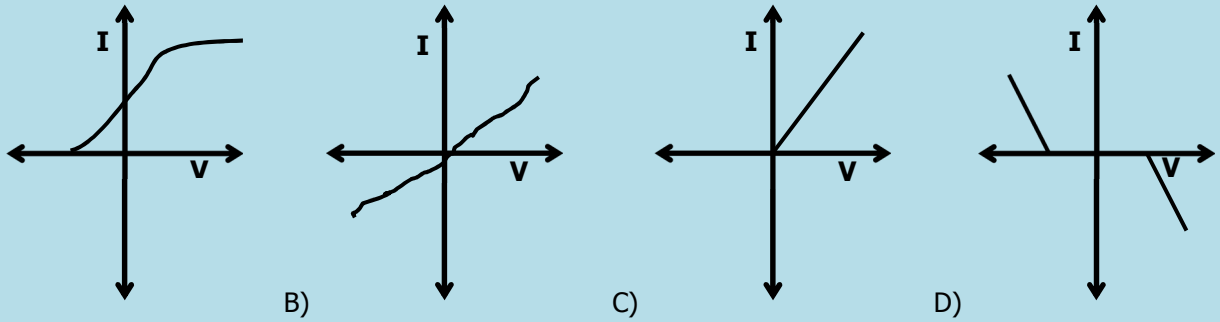
Q.4 **What will be the effect on the capacitance of a capacitor if area of each plate is doubled while separation between the plates is halved?**

A) Capacitance remains same
B) Capacitance becomes double
C) Capacitance becomes four times
D) Capacitance reduces to half

Q.5 **10 V potential difference is applied across the plate of 1 μF capacitor. What is the energy storied in capacitor?**

A) 0.5 mJ
B) 0.05 mJ
C) 5 mJ
D) 50 mJ

Q.6 **Which one of the following is I-V curve of a junction diode?**



A) B) C) D)

2013

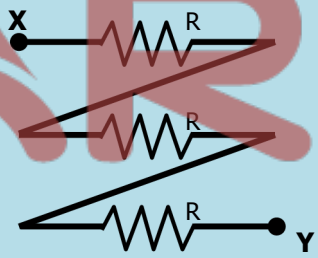
Q.7 **What is the charge stored on a 5 μF capacitor charged to potential difference of 12 V?**

A) 60 μC
B) 2.4 C
C) 2.4 μC
D) 60 C

Q.8 **12-volt battery is applied across 6-ohm resistance to have a steady flow of current. What must be the required potential difference across the same resistance to have a steady current of one ampere?**

A) 12 V
B) 6 V
C) 1 V
D) 3 V

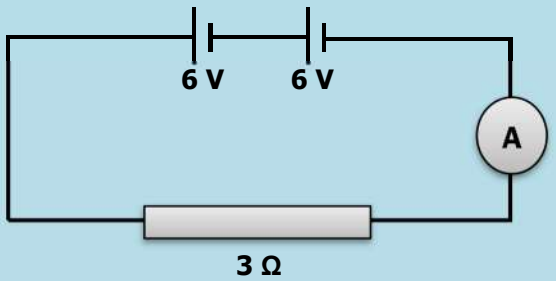
Q.9 **Three resistors each having value 'R' are connected as shown in figure. What is the equivalence resistance between 'X' and 'Y'?**



A) R
B) R/3
C) 3R
D) R^3

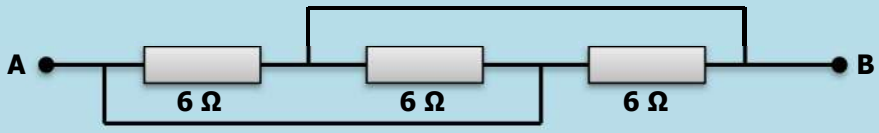
2014

Q.10 **What is the reading of Ammeter as shown in the circuit diagram?**



A) 1 A
B) 15 A
C) 5 A
D)10 A

Q.11 **Three 6 Ω are connected as shown in the diagram.**



What is the resistance between points 'A' and 'B'?

A) 6 Ω
B) 16 Ω
C) 4 Ω
D) 2 Ω

Q.12 **The difference between the plates of a parallel plate capacitor is 2.0 mm and area of each plate is 2.0 m^2. The plates are in a vacuum. A potential difference of 1.0 x 10^4 V is applied across the plates. Find the capacitance.**

A) 4 x 10^{-3} F
B) 3.54 x 10^{-9} F
C) 8.85 x 10^{-9} F
D) 9.0 x 10^{-9} F

2015

Q.13 **Which combinations of seven identical resistors each of 2 Ω gives rise to the resultant of 10/11 Ω?**

A) 5 Parallel, 2 Series
B) 4 Parallel, 3 Series
C) 3 Parallel, 4 Series
D) 2 Parallel, 5 Series

Q.14 **If a resistor having resistance 'R' is cut into three equal parts, then the equivalent of parallel combination is:**

A) $\frac{6}{R}$
B) $\frac{3}{R}$
C) $\frac{R}{9}$
D) $\frac{R}{3}$

Q.15 **The resistance of a piece of wire is 12 Ω. It is bent to form an equilateral triangle. What is the equivalent resistance between any two corners of the triangles?**

A) 1.3 Ω
B) 2.0 Ω
C) 4.0 Ω
D) 2.7 Ω

2016

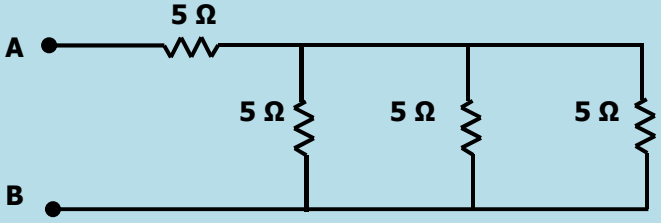
Q.16 **If the length, width and separation between the plates of a parallel plate capacitor is doubled then its capacitance becomes:**

A) Double
B) Half
C) Four-times
D) Eight-times

Q.17 **Resistance between two opposite faces of square thin film of area 1 mm^2 having thickness of 1 μm if resistivity of material is 10^{-6} Ω will be:**

A) 1000 Ω
B) 100 Ω
C) 1 Ω
D) 10 Ω

Q.18 **Total resistance between 'A' and 'B' in the given circuit is:**



A) 5.6 Ω
B) 3.33 Ω
C) 0.33 Ω
D) 6.6 Ω

ANSWERS						
	Q.1	D	**Q.7**	A	**Q.13**	D
	Q.2	A	**Q.8**	B	**Q.14**	C
	Q.3	C	**Q.9**	C	**Q.15**	B
	Q.4	C	**Q.10**	C	**Q.16**	A
	Q.5	B	**Q.11**	D	**Q.17**	**X**
	Q.6	B	**Q.12**	C	**Q.18**	D

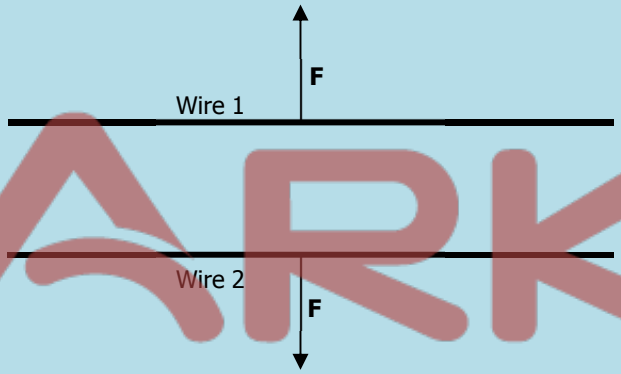
11 MAGNETISM & ELECTROMAGNETISM

2011

Q.1 **If the number of turns of a solenoid circular coil is doubled, but the current in the coil and radius of the coil remains same, then what will be the magnetic flux density produced by the coil?**

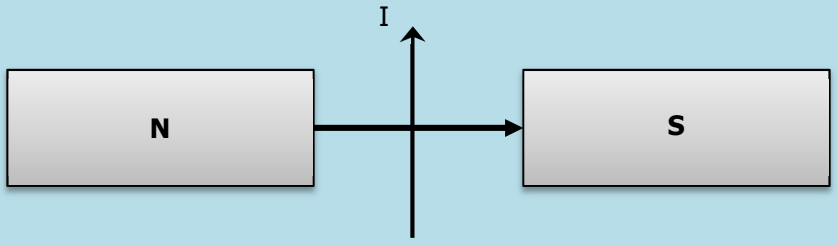
A) Magnetic flux density will be halved
B) Magnetic flux density increases by different amount at different points
C) Magnetic flux density remains unchanged
D) Magnetic flux density will be doubled

Q.2 **Two long parallel wires Wire 1 and Wire 2 repel each other as shown in the figure. What could be the reasons?**



A) Both carry current in same direction
B) Both carry current in opposite direction
C) Wire 1 has current, but Wire 2 has no current
D) Wire 2 has current, Wire 1 has no current

Q.3 **The diagram shows a wire, carrying a current 'I', placed the poles of a magnet:**
In which direction does the force on the wire act?



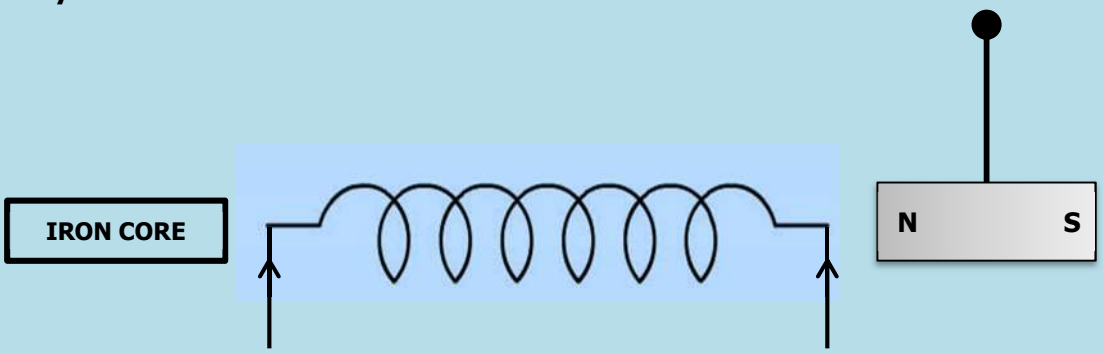
A) Upwards
B) Downwards
C) Towards the 'N' pole of the magnet
D) Towards the 'S' pole of the magnet

2012

Q.4 **A 10 cm long solenoid has 100 turns. What will be the magnetic field inside it along its axis if one micro ampere current is passed through it?**

A) $4\pi \times 10^{-13}$ tesla
B) $4\pi \times 10^{-7}$ tesla
C) $4\pi \times 10^{-10}$ tesla
D) $4\pi \times 10^{-16}$ tesla

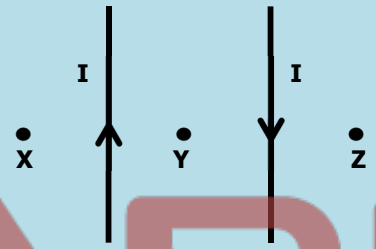
Q.5 **The diagram shows a small magnet hanging on a thread near the end of a solenoid carrying a steady current 'I':**



What happens to the magnet as the iron core is inserted into the solenoid?

A) It moves towards solenoid and rotates through 180°
B) It moves towards the solenoid
C) It moves away from solenoid
D) It moves away from solenoid and rotates through 180°

Q.6 **Two long straight parallel wires held vertically have equal but opposite currents as shown in the figure.**



Which of the following effect will be observed?

A) Magnetic field at 'X' is stronger than that at 'Y' and 'Z'
B) Magnetic field at 'X' is weaker than that at 'Y' and 'Z'
C) Magnetic field at 'X', 'Y' and 'Z' is same
D) Magnetic field at 'X' is weaker than that at 'Y' but stronger than that at 'Z'.

2013

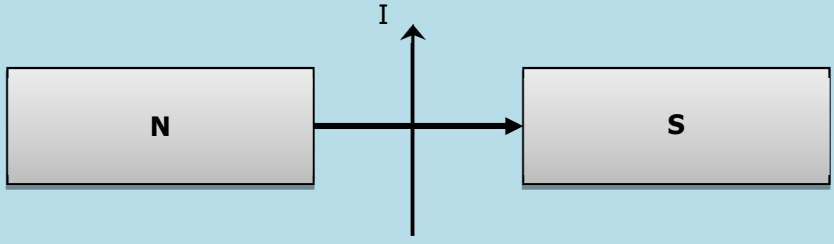
Q.7 **A solenoid is cut into two halves. Magnetic induction due to same current in each half will be:**

A) Half of the original
B) Double of the original
C) Same as original
D) Four times of the original

Q.8 **A long straight current carrying conductor has current directed from bottom to top when held vertically. What will be the direction of magnetic field lines when observed from below the conductor?**

A) Clockwise
B) Anti clockwise
C) Vertically upward
D) Vertically downward

Q.9 **The diagram shows a wire, carrying a current 'I', placed between the poles of magnet: In which direction does the force on the wire act?**



A) Towards the 'N' pole of the magnet
B) Downwards
C) Upwards
D) Towards the 'S' pole of the magnet

2014

Q.10 **A solenoid 15 cm long has 300 turns of wire. A current of 5 A flows through it. What is the magnitude of magnetic field inside the solenoid?**

A) 75×10^{7} T
C) $4\pi \times 10^{-3}$ T
B) $60 \times 10^{+3}$ T
D) $750\pi \times 10^{+3}$ T

Q.11 **Due to current in a straight conductor the difference between magnetic field lines**

A) Increases away from conductor
C) Increases towards conductor
B) Decreases away from conductor
D) Decreases and then increases towards conductor

Q.12 **Magnetic Resonance Imaging (MRI) is used to identify the image of**

A) Tumors and inflamed tissues
C) Skin cells
B) Blood cells
D) Bone structures

2015

Q.13 **Magnetic field strength is measure in:**

A) Wbm^{-1}
C) Wbm^{2}
B) Wbm^{-2}
D) Wb

Q.14 **Force on current carrying conductor per unit length is given by:**

A) IL sinΘ
B) IL
B) ILB
D) IB sinΘ

Q.15 **If 'A' is fundamental dimension of ampere then the dimension of magnetic field strength is:**

A) $[MT^{2}A^{-2}]$
C) $[MT^{2}L^{2}A^{-1}]$
B) $[MT^{2}A^{-1}]$
D) $[MT^{2}L^{-2}A^{-2}]$

2016

Q.16 **'F' is maximum force acting on a conductor. Now if we change the direction of conductor by making an angle of 45° with the magnetic field then the force becomes:**

A) $\frac{F}{2}$
C) $\frac{F}{\sqrt{2}}$
B) 2F
D) $\sqrt{2}$ F

Q.17 **If we doubled all the parameters of the force acting on current carrying conductor and θ = 90° then magnetic force becomes:**

A) Half
C) Eight-times
B) Double
D) Four-times

Q.18 **The force acting on current carrying conductor will be maximum if the angle between magnetic field and conductor is:**

A) 0°
C) 90°
B) 30°
D) 60°

ANSWERS						
	Q.1	D	**Q.7**	C	**Q.13**	B
	Q.2	B	**Q.8**	A	**Q.14**	D
	Q.3	B	**Q.9**	B	**Q.15**	B
	Q.4	C	**Q.10**	C	**Q.16**	C
	Q.5	B	**Q.11**	A	**Q.17**	C
	Q.6	A	**Q.12**	A	**Q.18**	C

12 MODERN PHYSICS

2011

Q.1 **In Helium-Neon laser, population inversion of _____ atoms is achieved which emit radiations, when they are stimulated to fall at lower level.**

A) Neon
B) Helium
C) Helium and Neon
D) Chromium

Q.2 **Wavelength of X-rays is the order of:**

A) 10^{-6} m
B) 10^{-10} m
C) 10^{-13} m
D) 100 m

Q.3 **Laser beam can be used to generate three-dimensional image of object in a process called:**

A) Computed technology
B) Computed tomography
C) Holography
D) Computerized axial tomography

Q.4 **Which of the following is true for Lasers?**

A) Electrons are emitted
B) Stimulated emission of electrons is needed
C) Coherent monochromatic light is emitted
D) There is a population inversion of photons

Q.5 **What is meant by spontaneous emission of electrons in solids?**

A) Electrons being emitted by the solids through photoelectric effect when irradiated with electromagnetic radiation
B) Incident electrons colliding with electrons in solids and releasing doubling the number of incident electrons
C) Electrons in solids are emitted without any external stimulus through radiation
D) Excited electrons going back to lower energy states immediately by releasing energy.

Q.6 **When electrons lose all their kinetic energy in the first collision, the entire kinetic appears as an X-ray photon of energy:**

A) K.E = eV
B) K.E = $\frac{h\lambda_{min}}{c}$
C) K.E = $\frac{hc}{\lambda_{min}}$
D) K.E = $\frac{h}{\lambda_{max}}$

Q.7 **The characteristic X-ray spectrum is due to:**

A) The absorption of neutrons by target material
B) The bombardment of target material by protons
C) The bombardment of target material by electrons
D) The bombardment of target material by alpha particles

2012

Q.8 **The kinetic energy K.E. with which the electron strikes the target is given by:**

A) K.E. = e^2V
B) K.E. = hc/λ
C) K.E. = hf^2
D) K.E. = eV

Q.9 **X-rays can be produced by bombardment of _____ on target metal:**

A) Protons
B) Electrons
C) Neutrons
D) Alpha particles

Q.10 **LASER is an acronym for:**
A) Light amplification by stimulated emission of radiation
B) Light annihilation by stimulated emission of radiation
C) Light amplitude of stimulated emission of radiation
D) Light amplification by stimulated emission of radio

Q.11 **Laser light is monochromatic which means**
A) It consists of one ray of light
B) It consists of one wavelength
C) It consists of carbon monoxide gas
D) It consists of photons having 1 eV energy

Q.12 **If an electron in the 'K' shell is removed and an electron from 'L' shell jumps to occupy the hole in the 'K' shell, it emits a photon of energy:**
A) $hf_{K_\alpha} = E_L - E_K$
B) $hc = E_L - E_K$
C) $h/\lambda_{K_\alpha} = E_L - E_K$
D) $hf_{K_\alpha} = E_K - E_L$

Q.13 **Which of the following property must be there in a substance so that it can be used as target in X-ray tube?**
A) It must have low melting point
B) It must have low atomic number
C) It must have high reflecting ability
D) It must have high atomic number

Q.14 **Which of the following can be used to produce population inversion for the emission of Laser?**
A) Optical pumping
B) Optical fibre
C) Optical instrument
D) Optical polarization

2013

Q.15 **X-rays from a given X-ray tube operating under specified conditions have a minimum wavelength. The value of this minimum wavelength could be reduced by:**
A) Cooling the target
B) Reducing the temperature of the filament
C) Increasing the potential difference between the cathode and the target
D) Reducing the pressure in the tube

Q.16 **Helium-neon lasers are used for the:**
A) Precise measurement of range finding
B) Optical fiber communication systems
C) Surveying for construction of tunnels
D) Welding detached bone of body

Q.17 **What is the type of characteristic X-ray photon whose energy is given by relation 'hf = $E_M - E_K$'?**
A) K – alpha
B) M – alpha
C) K – beta
D) M – beta

Q.18 **Kinetic energy of electrons by applying potential difference V_1 across the x-ray tube is KE_1 while V_2 potential difference produce kinetic energy equal to KE_2. What will be the value of $KE_1:KE_2$ if ratio of potential difference $V_1:V_2 = 2:3$?**
A) 3:2
B) 4:9
C) 9:4
D) 2:3

Q.19 **What will be the relation for the speed of electron accelerated towards the target in X-ray tube by applying potential difference 'V', take mass of electron 'm' and charge on electron 'e'?**
A) $v = \sqrt{\frac{2Ve}{m}}$
B) $v = \sqrt{\frac{2me}{V}}$
C) $v = \sqrt{\frac{2V}{me}}$
D) $v = \sqrt{2meV}$

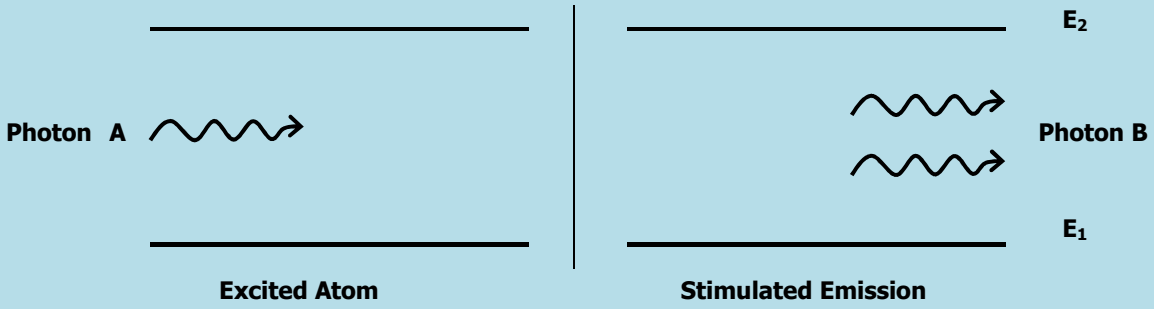
Q.20 **For what CAT stands in X-ray technology?**
A) Capacitor Amplifier Transistor
B) Computerized Axial Tomography
C) Cathode Anode Technique
D) Current Amplification Technology

Q.21 **During the production of LASER, when the excited state E_2 contains more number of atoms than the ground state E_1, the state is known as:**

A) Population inversion
B) Ground State
C) Excited state
D) Metastable state

2014

Q.22 **Stimulated emission of two photons 'A' and 'B' during LASER action is shown in figure:**



What is the relation of wavelengths of two photons?

A) $\lambda_A = \lambda_B$
B) $\lambda_A > \lambda_B$
C) $\lambda_A < \lambda_B$
D) $\lambda_A = 2\lambda_B$

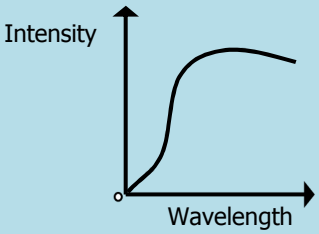
Q.23 **Bones absorb greater amount of incident X-rays than flesh. This is because of the fact that**

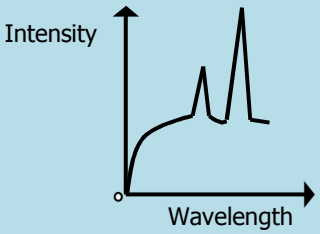
A) Bones lie between the flesh
B) Bones are light in color
C) Bones contain material of low densities
D) Bones contain material of high densities

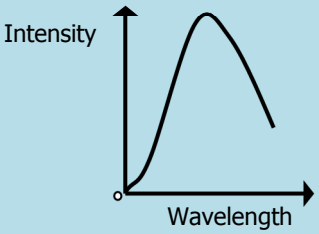
Q.24 **Which of the following techniques is the practical application of X-rays?**

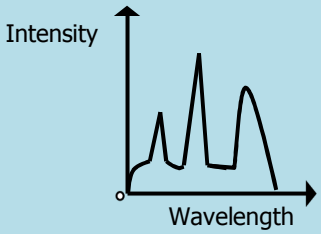
A) Magnetic Resonance Imaging
B) Ultrasonography
C) Computerized Axial Topography
D) Positron Emission Tomography

Q.25 **Which one of the following spectra is most typical of the output of an X-ray tube?**

A)


C)


B)


D)


Q.26 **Which one of the following has the largest energy content?**

A) γ-rays
B) X-rays
C) Infra-red radiations
D) Ultra-violet radiations

Q.27 **What will be the energy of accelerated electron used to produce X-rays when the accelerating potential is 2 kV?**

A) 2×10^{-19} J
B) 1.6×10^{-19} J
C) 3.2×10^{19} J
D) 3.2×10^{-16} J

Q.28 **Process of generating three dimensional images of objects by using laser beam is called**

A) Photography
B) 3-D cinema
C) Holography
D) Tomography

2015

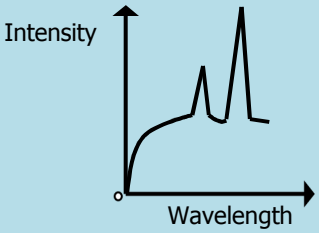
Q.29 **In the case when the electrons lose all their kinetic energy (K.E.) in the first collision, the X-ray photon emitted has which of the following set of frequency and wavelength?**

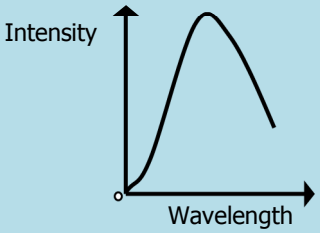
A) f_{max}, λ_{min}
B) f_{max}, λ_{max}
C) f_{min}, λ_{max}
D) f_{min}, λ_{min}

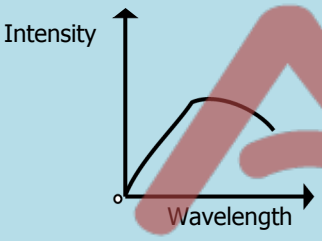
Q.30 **The potential difference between target and cathode of an X-rays tube is 20 kV and current is 20 mA. What is the λ_{min} of the emitted X-ray?**

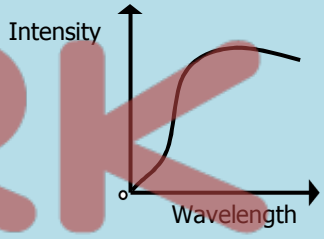
A) 6.19×10^{-4} m
B) 6.19×10^{-14} m
C) 6.19×10^{-11} m
D) 6.19×10^{-19} m

Q.31 **Which of the following spectra is most typical of the output of an X-ray tube?**

A)


C)


B)


D)


Q.32 **One method of creating an inverted population is known as _____ and consist of illuminating the laser material with light.**

A) Optical Pumping
C) Excitation
C) Bremsstrahlung
D) Holography

Q.33 **In population inversion (Ruby Laser) atoms can reside in the excited state for:**

A) 10^{-11}
C) 10^{-8}
C) 10^{-3}
D) 10^{+3}

Q.34 **If electrons of charge 'e' moving with velocity 'v' are accelerated through a potential difference 'V' and strike a metal target, then velocity of electrons is:**

A) $\frac{Ve}{m}$
B) $\sqrt{\frac{Ve}{m}}$
C) $\sqrt{\frac{Ve}{2m}}$
D) $\sqrt{\frac{2Ve}{m}}$

Q.35 **In X-ray tube, electrons after being accelerated through velocity 'v' strike the target, then the wavelength of emitted X-rays is:**

A) Not greater than $\frac{hc}{eV}$
B) Not less than $\frac{hc}{eV}$
C) Equal to the $\frac{h}{mV}$
D) Equal to $\frac{hc}{eV}$

2016

Q.36 **The shadow of the bones in X-rays photographic film appears lighter than the surrounding flesh due to:**

A) Bones reflect greater amount of X-rays
B) Bones absorb less amount of X-rays
C) Bones absorb greater amount of X-rays
D) Bones totally reflect X-rays

Q.37 **The atom is excited to an energy level E_i from its ground state energy level E_o, the wavelength of the radiations emitted is:**

A) $\frac{(E_o - E_i)}{hc}$
B) $\frac{(E_i - E_o)}{hc}$
C) $\frac{hc}{(E_i - E_o)}$
D) $\frac{E_i}{hc} - \frac{E_o}{hc}$

Q.38 **Which one of the following gas is the lasing or active medium in the laser tube?**

A) Hydrogen
B) Helium
C) Neon
D) Carbon dioxide

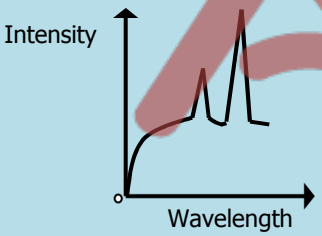
Q.39 **The target of X-ray tube is made up of which metal?**

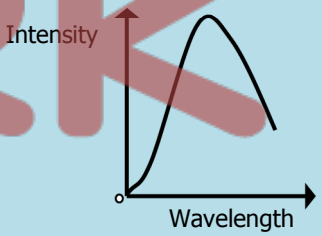
A) Iron
B) Nickel
C) Brass
D) Tungsten

Q.40 **The X-rays consists of:**

A) High energy proton
B) High energy electrons
C) High energy γ-rays
D) High energy photons

Q.41 **Which of the following graph represents the output of an X-ray?**

A)


C)


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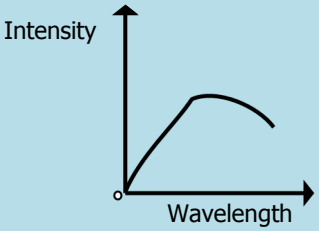
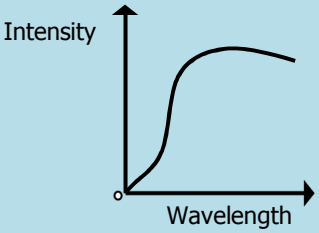


D)


Q.42 **The continuous spectrum of X-ray is formed due to:**

A) Characteristics of X-rays
B) Bremsstrahlung X-ray
C) Soft X-ray
D) Hard X-ray

ANSWERS

Q.1	A	**Q.15**	C	**Q.29**	A
Q.2	B	**Q.16**	C	**Q.30**	C
Q.3	C	**Q.17**	C	**Q.31**	A
Q.4	D	**Q.18**	D	**Q.32**	A
Q.5	D	**Q.19**	A	**Q.33**	B
Q.6	A	**Q.20**	B	**Q.34**	D
Q.7	C	**Q.21**	A	**Q.35**	D
Q.8	D	**Q.22**	A	**Q.36**	B
Q.9	B	**Q.23**	D	**Q.37**	C
Q.10	A	**Q.24**	C	**Q.38**	C
Q.11	B	**Q.25**	C	**Q.39**	D
Q.12	A	**Q.26**	A	**Q.40**	D
Q.13	D	**Q.27**	D	**Q.41**	A
Q.14	A	**Q.28**	C	**Q.42**	B

13 NUCLEAR PHYSICS

2011

Q.1 **Ionizing capability of gamma rays is:**

A) Equal to alpha and beta particle
B) Less than alpha but greater than beta particles
C) Less than both alpha and beta particles
D) Less than beta but greater than alpha particles

Q.2 **Half-life of a radioactive element is:**

A) Inversely proportional to square of decay constant
B) Directly proportional to square of decay constant
C) Directly proportional to decay constant
D) Inversely proportional to decay constant

Q.3 **The transformation of a neutron into proton in the nucleus gives rise to emission of:**

A) Beta particles
B) Alpha particles
C) Gamma particles
D) X-rays

Q.4 **The ratio of the rate of decay of a parent atom to the number of radioactive nuclei present at that time is equal to:**

A) Half-life of radioactive element
B) Mean life
C) Decay constant of radioactive element
D) Activity if radioactive element

Q.5 **Which one of the following particle is emitted as a result of nuclear reaction?**

$$Ra^{226} \longrightarrow Rn^{222}$$

A) Beta
B) Alpha
C) Gamma rays
D) One alpha and one beta

Q.6 **Which of following is used to estimate the circulation of blood in a patient?**

A) Carbon-14
B) Carbon-12
C) Phosphorus-32
D) Sodium-24

Q.7 **For the radiotherapy of a patient, it is required to double the absorbed dose in gray. What step must be taken?**

A) Energy must be quadrated
B) Energy must be halved
C) Energy must be raised four times
D) Energy must be doubled

2012

Q.8 **What is the charge on alpha particles emitted during the phenomenon of radioactivity?**

A) +e
B) –e
C) –2e
D) +2e

Q.9 **A radioactive nuclide decays by emitting an alpha particle, a beta particle and a gamma ray photon, the change in the nucleon number will be:**

A) -4
B) -1
C) -2
D) -3

Q.10 **A half-life of sodium-24 is _____ which is used to estimate the volume of blood in a patient:**

A) 6 hours
B) 15 hours
C) 8 hours
D) 15 days

Q.11 **Which of the following is unit of absorbed dose?**

A) Sievert
B) Gray
C) Roentgen
D) Curie

Q.12 **In a radioactive phenomenon observation shown in figure where α deviates lesser than β in some electric or magnetic field (not shown in figure). What is the reason of less deviation of α?**

A) α is charged particle
C) α is neutral particle
C) α is heavier particle
D) α is lighter particle

Q.13 **The isotope of Iodine-131 is used in the treatment of**

A) Blood cancer
B) Bone cancer
C) Lung tumor
D) Thyroid cancer

Q.14 **Which of the following effect is observed due to emission of β^- during the phenomenon of radioactivity?**

A) A increases by 1 and Z remains same
B) Z increases by 1 and A remains same
C) Z decreases by 1 and A remains same
D) A decreases by 1 and Z remains same

2013

Q.15 **In cloud chamber the path of β-particles is:**

A) Straight, thick, short
B) Thin, wavy, shorter
C) Thin, wavy, longer
D) Thin, straight, short

Q.16 **Among the three types of radioactive radiation, which have strongest penetration power?**

A) Alpha
B) Gamma
C) Beta
D) All have same penetration power

Q.17 **Emission of alpha decay from a radioactive substance causes:**

A) Decreases in 'Z' by 4 and decreases in 'A' by 2
B) Decreases in 'A' by 1 and 'Z' remains same
C) Decreases in 'Z' by 1 and 'A' remains same
D) Decreases in 'A' by 4 and decreases in 'Z' by 2

Q.18 **10 Joule of energy is absorbed by 10-gram mass from a radioactive source. What is the absorbed dose?**

A) 1 gray
B) 1000 gray
C) 10 gray
D) 100 gray

Q.19 **Isotopes are those nuclei of an element that have:**

A) Same mass number but different atomic number
B) Same mass number as well as atomic number
C) Different mass number as well as atomic number
D) same atomic number but different mass number

Q.20 **Which one of the following emission takes place in a nuclear reaction?**

$$_{90}Th^{234} \longrightarrow {}_{91}Pa^{232} + \_\_\_$$

A) Alpha
B) Gamma
C) Beta
D) Photons

Q.21 **Emission of radiation from radioactive substance is:**

A) Dependent on both temperature and pressure
B) Independent of temperature but dependent on pressure
C) Independent of both temperature and Pressure
D) Independent of pressure but dependent on temperature

2014

Q.22 **Which one of the following isotopes of Iodine is used for the treatment of thyroid cancer?**

A) I - 113
B) I - 120
C) I - 131
D) I - 140

Q.23 **A beta (β) particle is a fast-moving electron. During a β – decay how the atomic number and mass number of a nucleus change?**

	Atomic Number	Mass Number
A)	Remains the same	Increases by one
B)	Increases by one	Decreases by two
C)	Increases by one	Remains the same
D)	Decreases by two	Decreases by four

Q.24 **A Uranium isotope $^{232}_{92}U$ undergoes one α–decay and one $^{0}_{-1}\beta$ – decay. What is the final product?**

A) 90
B) 92
C) 89
D) 88

Q.25 **A naturally occurring radioactive element decays two alpha particles. Which one of the following represents status of daughter element with respect to mass number 'A' and charge number 'Z'?**

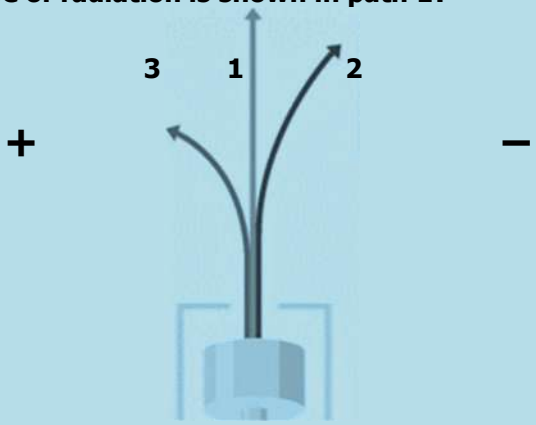
A) 'Z' decreases by 4 and 'A' decreases by 2
B) 'Z' decreases by 2 and 'A' decreases by 4
C) 'Z' decreases by 4 and 'A' decreases by 8
D) 'Z' decreases by 8 and 'A' decreases by 4

Q.26 **A radioactive isotope 'W' decays to 'X' which decays to 'Y' and 'Y' decays to 'Z' as represented by the figure below:**

What is the change in the atomic number from 'W' to 'Z'?

A) Increases by 3
B) Decreases by 3
C) Increases by 5
D) Decreases by 5

Q.27 **Three paths of radioactive radiations are observed as shown in the figure in the presence of electric field. Which type of radiation is shown in path 1?**



A) Alpha
B) Beta
C) Gamma
D) Cathode rays

Q.28 **What is the absorbed dose 'D' of a sample of 2 kg which is given an amount of 100 J of radioactive energy?**

A) 200 Gy
B) 102 Gy
C) 50 Gy
D) 98 Gy

2015

Q.29 **In the reaction, $^{234}_{92}Th \longrightarrow {}^{234}_{91}Y + {}^{0}_{-1}e$ the electron $^{0}_{-1}e$ emits from the**

A) 1st Orbit
B) 2nd Orbit
C) Nucleus
D) Valence Shell

Q.30 **According to the equation $^{A}_{Z}X \longrightarrow Y + 3\alpha$ particles, what are the atomic and mass numbers of 'Y'?**

A) Z – 6, A – 12
B) Z – 2, A – 4
C) Z + 1, A
D) Z + 3, A

Q.31 **A certain radioactive nuclide of mass number 'x' decays by β-emission and α-emission to a second nuclide of mass number 't'. Which of following correctly relates 'x' and 't'?**

A) x = t + 4
B) x = t – 4
C) x – 3 = t
D) x – 1 = t

Q.32 **During the decay of radioactive isotopes $^{232}_{90}X$ to a stable isotope, six α-particles and four β-particles are emitted, what is the atomic number 'Z' and mass number 'A' of the stable isotopes.**

A) Z = 70, A = 220
B) Z = 78, A = 212
C) Z = 82, A = 212
D) Z = 82, A = 208

Q.33 **Cobalt 60 is used in medicine and is an intense source of:**

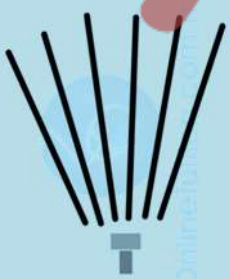
A) α-particles
B) β-particles
C) γ-rays
D) Neutrons

Q.34 **Sodium 24 has half-life of 15 hour and it is used in medicine to estimate:**

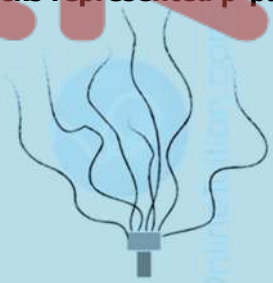
A) Kidney Function
B) Plasma Blood Volume
C) Iron in Plasma
D) Thyroid Function

Q.35 **In Wilson Cloud Chamber which of the following tracks represented β-particles?**

A)



C)



B)

D)

2016

Q.36 **Wavelength of γ-rays is:**

A) Equal to the X-rays
B) Shorter to the X-rays
C) Longer to the X-rays
D) Boarder to the X-rays

Q.37 **Thorium is transformed after the transmission of β-particle into:**
A) Bismuth
B) Protactinium
C) Polonium
D) Palladium

Q.38 **Emission of γ-rays from radioactive element results into:**
A) Bismuth
B) Protactinium
C) Polonium
D) Palladium

Q.39 **The relation between decay constant 'λ' and half-life '$T_{½}$' of radioactive substance is:**
A) $\lambda = \frac{1}{T_{½}}$
B) $\lambda = 0.693\ T_{½}$
C) $\lambda = T_{½}$
D) $\lambda = \frac{0.693}{T_{½}}$

Q.40 **Radioisotope which is used to combat cancer of thyroid gland is:**
A) Iodine-131
B) Phosphorous-32
C) Strontium-90
D) Cobalt-60

Q.41 **Sodium-24 is used for:**
A) Sterilization
B) Study of circulation of blood
C) Skin Cancer
D) Thyroid Cancer

Q.42 **Energy radiation absorbed at the rate of one joule per kilogram is called:**
A) 1 Rad
B) 1 Sievert
C) 1 Yellow
D) 1 Gray

ANSWERS

Q.1	C	**Q.15**	C	**Q.29**	C
Q.2	D	**Q.16**	B	**Q.30**	A
Q.3	A	**Q.17**	D	**Q.31**	A
Q.4	C	**Q.18**	B	**Q.32**	D
Q.5	B	**Q.19**	D	**Q.33**	C
Q.6	D	**Q.20**	C	**Q.34**	B
Q.7	D	**Q.21**	C	**Q.35**	C
Q.8	D	**Q.22**	C	**Q.36**	C
Q.9	A	**Q.23**	C	**Q.37**	B
Q.10	B	**Q.24**	B	**Q.38**	C
Q.11	B	**Q.25**	C	**Q.39**	D
Q.12	C	**Q.26**	B	**Q.40**	A
Q.13	D	**Q.27**	C	**Q.41**	B
Q.14	B	**Q.28**	C	**Q.42**	D

2011-2016

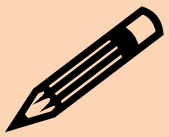
Medical College Aptitude Test - CHEMISTRY

UHS, Lahore

Past Papers Unit Wise MCQs

Ali Raza
ARK

Table of Specification



NO.	UNIT NAME	MCQs
	PHYSICAL CHEMISTRY	
1A.	Fundamental Concepts	2
2A.	States of Matter	2
3A.	Atomic Structure	2
4A.	Chemical Bonding	2
5A.	Chemical Energetics	2
6A.	Solutions	2
7A.	Electrochemistry	2
8A.	Chemical Equilibrium	2
9A.	Reaction Kinetics	2
	INORGANIC CHEMISTRY	
1B.	Periods	2
2B.	Groups	2
3B.	Transition Elements	2
4B.	Elements of Biological Importance	4
	ORGANIC CHEMISTRY	
1C.	Fundamental Principles	2
2C.	Hydrocarbon	2
3C.	Alkyl Halides	2
4C.	Alcohols and Phenols	4
5C.	Aldehydes and Ketones	3
6C.	Carboxylic Acids	3
7C.	Amino Acids	6
8C.	Macromolecules	6
9C.	Environmental Chemistry	2
	TOTAL:	58

Contents

PHYSICAL CHEMISTRY

1A FUNDAMENTAL CONCEPTS

2011

Q.1 **In mass spectrometer, detector or collector measures the:**

A) Masses of isotopes
B) Percentages of isotopes
C) Relative abundances of isotopes
D) Mass numbers of isotopes

Q.2 **How many 'Cl' (chlorine) atoms are in two moles of chlorine?**

A) $2 \times 6.02 \times 10^{-23}$ atoms
B) $35.5 \times 6.02 \times 10^{23}$ atoms
C) 2×10^{23} atoms
D) $2 \times 6.02 \times 10^{23}$ atoms

2012

Q.3 **An organic compound has empirical formula C_3H_3O, if molar mass of compound is 110.15 $gmol^{-1}$. The molecular formula of this organic compound is (A, of C=12, H=1.008 and O=16)**

A) $C_6H_6O_2$
C) C_3H_3O
C) $C_9H_9O_3$
D) $C_6H_6O_3$

Q.4 **When 8 grams (4 moles) of H_2 react with 2 moles of O_2, how many moles of water will be formed?**

A) Five
B) Four
C) Six
D) Three

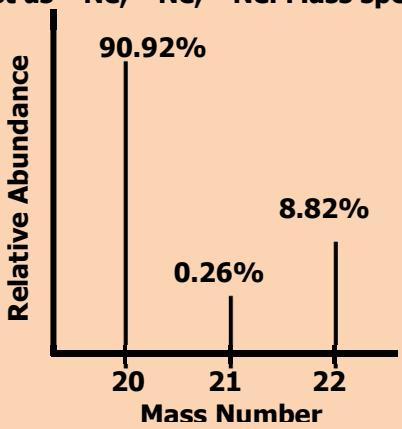
2013

Q.5 **Hydrogen burns in chlorine to produce hydrogen chloride. The ratio of masses of reactants in chemical reaction is:**

$$H_2 + Cl_2 \longrightarrow 2HCl$$

A) 1:35.5
B) 2:35.5
C) 1:71
D) 2:70

Q.6 **A sample of Neon is found to exist as ^{20}Ne, ^{21}Ne, ^{22}Ne. Mass spectrum of 'Ne' is as follow:**



What is the relative atomic mass (A, value) of Neon?

A) 20.18
B) 20.28
C) 20.10
D) 20.22

2014

Q.7 **A polymer of empirical formula CH_2 has molar mass of 28000 g mol^{-1}. Its molecular formula will be**

A) 100 times that of its empirical formula
B) 200 times that of its empirical formula
C) 500 times that of its empirical formula
D) 2000 times that of its empirical formula

Q.8 **The number of molecules in 9 g of ice (H_2O) is**

A) 6.02×10^{24}
B) 6.02×10^{23}
C) 3.01×10^{24}
D) 3.01×10^{23}

2015

Q.9 **How many moles of sodium are present in 0.1 g of sodium?**

A) 4.3×10^{-3}
B) 4.03×10^{-1}
C) 4.01×10^{-2}
D) 4.3×10^{-2}

Q.10 **With the help of spectral data given calculate the mass of Neon and encircle the best option. (Percentage of $_{10}Ne^{20}$, $_{10}Ne^{21}$ and $_{10}Ne^{22}$ are 90.92%, 0.26% and 8.82% respectively).**

A) 22.18 amu
B) 21.18 amu
C) 20.18 amu
D) 22.20 amu

2016

Q.11 **The substance for the separation of isotopes is firstly converted into the:**

A) Neutral state
B) Free state
C) Vapour state
D) Charged state

Q.12 **The number of moles of CO_2 which contain 8.00 gm of oxygen is:**

A) 0.75
B) 1.50
C) 0.25
D) 1.00

ANSWERS				
	Q.1	C	**Q.7**	D
	Q.2	D	**Q.8**	D
	Q.3	A	**Q.9**	A
	Q.4	B	**Q.10**	C
	Q.5	A	**Q.11**	C
	Q.6	B	**Q.12**	C

2A States of Matter

2011

Q.1 **Melting point of water is higher than petrol, because intermolecular forces in water are:**

A) Weaker than petrol
B) Stronger than petrol
C) Same as in petrol
D) Negligible

Q.2 **DNA molecule is double stranded, in which two chains of DNA are twisted around each other by:**

A) Hydrogen bonds
B) Vander Waal's force
C) Covalent bonds
D) Dative bonds

2012

Q.3 **The number of molecules in 22.4 dm^3 of H_2 gas at 0 °C and 1 atm are**

A) 60.2×10^{23}
B) 6.02×10^{22}
C) 6.02×10^{25}
D) 6.02×10^{22}

Q.4 **Correct order of boiling points of the given liquid is**

A) $H_2O > HF > HCl > NH_3$
B) $HF > H_2O > HCl > NH_3$
C) $H_2O > HF > NH_3 > HCl$
D) $HF > H_2O > NH_3 > HCl$

2013

Q.5 **The coordination number of Na^+ in NaCl crystal is:**

A) 6
B) 2
C) 4
D) 8

Q.6 **There are four gases H_2, He, N_2 and CO_2 at 0 °C. Which gas shows greater non-ideal behavior?**

A) He
B) CO_2
C) H_2
D) N_2

2014

Q.7 **Ice is less dense than water at:**

A) 0 °C
B) 4 °C
C) -4 °C
D) 2 °C

Q.8 **At a given temperature and pressure, the one which shows marked deviation from ideal behavior is**

A) N_2
B) N_3
C) CO_2
D) He

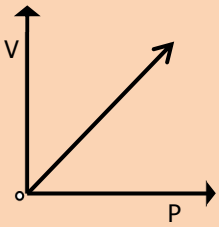
2015

Q.9 **If the volume of a gas collected at a temperature of 600 °C and pressure of 1.05×10^5 Nm^{-2} is 60 dm^3, what would be the volume of gas at STP (P=1.01×10^3 Nm^{-2}, T = 273 K)?**

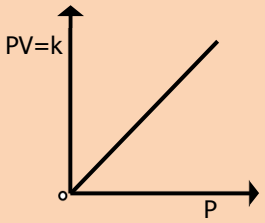
A) 25 cm^3
B) 75 cm^3
C) 100 cm^3
D) 51 cm^3

Q.10 **Which graph represents Boyle's law?**

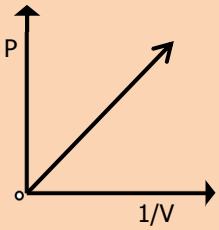
A)



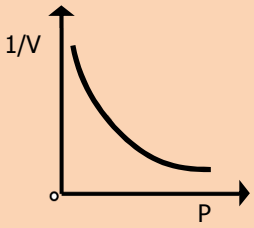
C)



B)



D)



2016

Q.11 **London dispersion forces are the only forces present among the:**

A) Molecules of H_2O in liquid state
B) Molecules of HCl gas
C) Atoms of helium in gaseous state at high temperature
D) Molecules of solid chlorine

Q.12 **Electrical conductivity of graphite is greater in one direction that in other due to:**

A) Isomorphism
B) Cleavage plane
C) Anisotropy
D) Symmetry

ANSWERS

Q.1	B	**Q.7**	A
Q.2	A	**Q.8**	C
Q.3	D	**Q.9**	D
Q.4	C	**Q.10**	B
Q.5	A	**Q.11**	C
Q.6	B	**Q.12**	C

3A ATOMIC STRUCTURE

2011

Q.1 **The elements for which the value of ionization energy is low, can:**

A) Gain electrons readily
B) Gains electron with difficulty
C) Loss electrons less readily
D) Lose electrons readily

Q.2 **The nature of cathode rays in discharge tube:**

A) Depends on the nature of gas taken in the discharge tube
B) Depends upon the nature of cathode in discharge tube
C) Is independent of the nature pf the gas in discharge tube
D) Depends upon the nature of anode in the discharge tube

2012

Q.3 **The relative energies of 4s, 4p and 3d orbitals are in the order**

A) 3d < 4p <4s
B) 4s < 3d < 4p
C) 4p < 4s < 3d
D) 4p < 3d < 4s

Q.4 **With increase in the value of Principal Quantum Number 'n', the shape of the s-orbitals remains the same although their sizes**

A) Decrease
B) Increase
C) Remain the same
D) May or may not remain the same

2013

Q.5 **Correct order of energy in the given subshells is:**

A) 5s > 3d > 3p > 4s
B) 5s > 3d > 4s > 3p
C) 3p > 3d > 5s > 4s
D) 3p > 3d > 4s > 5s

Q.60 **Number of electrons in the outermost shell of chloride ion (Cl^-) is:**

A) 17
B) 3
C) 1
D) 8

2014

Q.7 **According to the number of protons, neutrons and electrons given in the table, which one of the following options is correct?**

Species	Proton	Neutron	Electron
As	33	42	30
Ga	31	39	28
Ca	20	20	20

A) As^{+3}, Ga^{+3}, Ca
B) As^{+1}, Ga^{+2}, Ca
C) As^{+3}, Ga^{+3}, Ca^{+2}
D) As^{+1}, Ga, Ca^{+2}

Q.8 **If the e/m value of electron is 1.7588×10^{11} coulombs Kg^{-1}, then what would be the mass of electron in grams (charge on electron is 1.6022×10^{-19} coulombs)?**

A) 9.1095×10^{-31} g
B) 91.095×10^{-31} g
C) 9.1095×10^{-28} g
D) 0.919095×10^{-33} g

2015

Q.9 **Which one of the following pairs has the same electronic configuration as possessed by Neon (Ne-10)?**

A) Na^+, Cl^-
B) K^+, Cl^-
C) Na^+, Mg^{2+}
D) Na^+, F^-

Q.10 **There are four orbitals s, p, d and f. Which order is correct with respect to the increasing energy of the orbitals?**

A) 4s < 4p < 4d < 4f
B) 4p < 4s < 4f < 4d
C) 4s < 4f < 4p < 4d
D) 4f < 4s < 4d < 4p

2016

Q.11 **Number of neutrons in $^{66}_{30}Zn$ will be:**

A) 30
B) 35
C) 38
D) 36

Q.12 **The maximum number of electrons in electronic configuration can be calculated by using formula:**

A) 2l + 1
B) $2n^2 + 2$
C) $2n^2$
D) $2n^2 + 1$

ANSWERS

Q.1	D	**Q.7**	A
Q.2	C	**Q.8**	A
Q.3	B	**Q.9**	D
Q.4	B	**Q.10**	A
Q.5	B	**Q.11**	C
Q.6	D	**Q.12**	A

4A CHEMICAL BONDING

2011

Q.1 **The ability of an atom in a covalent bond to attract the bonding electrons is called:**

A) Ionization energy
B) Ionic bond energy
C) Electronegativity
D) Electron affinity

Q.2 **The paramagnetic character of a substance is due to:**

A) Bond pairs of electrons
B) Lone pairs of electrons
C) Unpaired electrons in atom or molecule
D) Paired electrons in valence shells of electrons

2012

Q.3 **The angle between unhybridized p-orbital and three sp^2 hybrid orbitals of each carbon atom in ether is:**

A) 120°
B) 90°
C) 109.5°
D) 180°

Q.4 **In 'H-F' bond electronegativity difference is '1.9'. What is the type of this bond?**

A) Polar covalent bond
B) Non-polar covalent bond
C) Pi (π) bond
D) Co-ordinate covalent bond

2013

Q.5 **According to valence shell electron pair repulsion theory, the repulsive forces between the electron pair of central atom of molecule are in the order:**

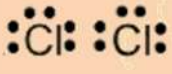
A) Lone Pair - Lone-Pair > Lone Pair - Bond Pair > Bond Pair - Bond Pair
B) Lone Pair - Bond Pair > Lone Pair - Lone Pair > Bond Pair - Bond Pair
C) Bond Pair - Bond Pair > Lone Pair - Lone Pair > Lone Pair - Bond Pair
D) One Pair - Bond Pair > Bond Pair - Bond Pair > Lone Pair - Lone Pair

Q.6 **In crystal lattice of ice, each O-atom of water molecule is attached to:**

A) Four H-atoms
B) Three H-atoms
C) One H-atom
D) Two H-atoms

2014

Q.7 **The suitable representation of dot structure of chlorine molecule is:**

A) 
C) 
B) 
D) 

Q.8 **When the two partially filled atomic orbitals overlap in such a way that the probability of finding electron is maximum around the line joining the two nuclei, the result is the formation of**

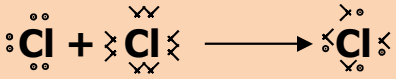
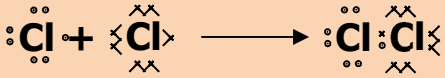
A) Sigma Bond
B) Pi-Bond
C) Hydrogen Bond
D) Metallic Bond

2015

Q.9 **Which one of the following hydrogen bonds is stronger than others?**

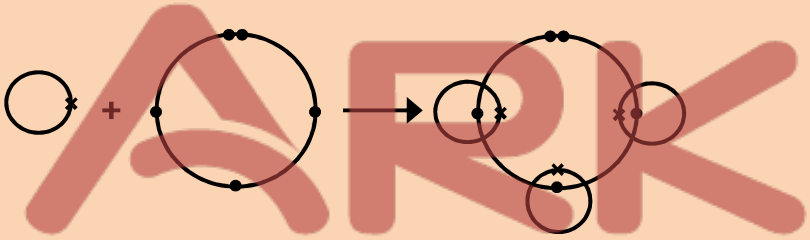
A) $N^{\delta-}—H^{\delta+}$ ..... $N^{\delta-}—H^{\delta+}$
B) $F^{\delta-}—H^{\delta+}$ ..... $F^{\delta-}—H^{\delta+}$
C) $O^{\delta-}—H^{\delta+}$ ..... $O^{\delta-}—H^{\delta+}$
D) $N^{\delta-}—H^{\delta+}$ ..... $O^{\delta-}—H^{\delta+}$

Q.10 **Which of the following is the correct dot and cross diagram of bonding between two chlorine atoms?**

A) 
B) 
C) 
D) 

2016

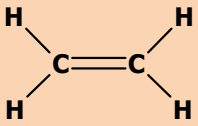
Q.11



Choose the right molecule.

A) CH_3
B) CO
C) H_2O
D) NH_3

Q.12



Calculate the number of σ bonds and π bonds in the molecule.

A) 1π and 5σ bonds
B) 2π and 4σ bonds
C) 3π and 3σ bonds
D) 6π and 6σ bonds

ANSWERS				
	Q.1	C	**Q.7**	B
	Q.2	C	**Q.8**	A
	Q.3	B	**Q.9**	B
	Q.4	A	**Q.10**	C
	Q.5	A	**Q.11**	D
	Q.6	A	**Q.12**	A

5A CHEMICAL ENERGETICS

2011

Q.1 **Lattice energy of an ionic crystal is the enthalpy of:**

A) Combustion
B) Dissociation
C) Dissolution
D) Formation

Q.2 **In standard enthalpy of atomization, heat of the surrounding:**

A) Remains unchanged
B) Increases
C) Increases than decreases
D) Decreases

2012

Q.3 **'ΔH' will be given a negative sign in**

A) Exothermic reactions
B) Decomposition reactions
C) Dissociation reaction
D) Endothermic reactions

Q.4 **Lattice energy of an ionic crystal is the enthalpy of**

A) Combustion
B) Dissociation
C) Dissolution
D) Formation

2013

Q.5 **Heat of formation ($\Delta H_f°$) for CO_2 is:**

A) -394 kJ/mole
B) +394 kJ/mole
C) -294 kJ/mole
D) -390 kJ/mole

Q.6 **Reactants have high energy than products in:**

A) Exothermic reactions
B) Endothermic reactions
C) Photochemical reactions
D) Non-spontaneous reactions

2014

Q.7 $2H_2 + O_2 \longrightarrow 2H_2O$ $\quad \Delta H = +285.5\ kJ\ mol^{-1}$

What will be the enthalpy change in the above reaction?

A) 205.5 kJ/mol
B) Zero kJ/mol
C) -205.5 kJ/mol
D) 1 kJ/mol

Q.8 **Combustion of graphite to form CO_2 can be done by two ways. Reactions are given as follows:**

$C + O_2 \longrightarrow CO_2$ $\quad \Delta H = -393.7\ kJ\ mol^{-1}$
$C + \frac{1}{2}O_2 \longrightarrow CO$ $\quad \Delta H = ?$
$CO + \frac{1}{2}O_2 \longrightarrow CO$ $\quad \Delta H = -283\ kJ\ mol^{-1}$

What will be enthalpy of formation of CO?

A) -676 kJ mol^{-1}
B) -110 kJ mol^{-1}
C) 110 kJ mol^{-1}
D) 676 kJ mol^{-1}

2015

Q.9 **The equation that represents standard enthalpy of atomization of hydrogen is:**

A) $\frac{1}{2}H_2O_{(l)} \longrightarrow H_{2(g)} + \frac{1}{2}O_{(g)}$ +218 kJ mol^{-1}

B) $\frac{1}{2}H_2O_{(l)} \longrightarrow H_{2(g)} + \frac{1}{2}O_{(g)}$ –218 kJ mol^{-1}

C) $\frac{1}{2}H_{2(g)} \longrightarrow H_{(g)}$ +218 kJ mol^{-1}

D) $\frac{1}{2}H_{2(g)} \longrightarrow H_{(g)}$ –218 kJ mol^{-1}

Q.10 **Standard enthalpy of combustion of graphite at 25 °C is –393.51 kJ mol^{-1} and that of diamond is –395.41 kJ mol^{-1}. The enthalpy change for graphite is:**

A) – 1.91
B) +2.1
C) –2.1
D) +1.91

2016

Q.11 $\mathbf{\frac{1}{2}H_{2(g)} \longrightarrow H_{(g)}}$ **ΔH = 218 kJmol^{-1}**

In this reaction, ΔH will be called:

A) Enthalpy of atomization
B) Enthalpy of decomposition
C) Enthalpy of formation
D) Enthalpy of the dissociation

Q.12 $\mathbf{Mg + \frac{1}{2}O_{2(g)} \longrightarrow MgO_{(g)}}$ **+ -692 kJmol^{-1} at STP.**

Enthalpy of the above reaction will be called:

A) $\Delta H°_{at}$
B) $\Delta H°_{s}$
C) $\Delta H°_{sol}$
D) $\Delta H°_{l}$

ANSWERS

Q.1	D	**Q.7**	C
Q.2	D	**Q.8**	B
Q.3	A	**Q.9**	C
Q.4	D	**Q.10**	D
Q.5	A	**Q.11**	A
Q.6	A	**Q.12**	D

6A SOLUTIONS

2011

Q.1 **Mole fraction of any compound us the ratio of moles of all components in a:**

A) Compound
B) Solution
C) Molecule
D) Solid

Q.2 **Molarity is defined as the number of moles of any substance dissolved:**

A) Per dm^3 of water
B) In one gram of water
C) Per m^3 of water
D) In 100 ml of water

2012

Q.3 **As number of solute particles increases, freezing point of the solution:**

A) Remains the same
B) Increases
C) First increases, then decreases
D) Decreases

Q.4 **Boiling point constants help us to determine**

A) Molar masses
B) Volumes
C) Pressures
D) Masses

2013

Q.5 **If 18.0 g of glucose is dissolved in 1 kg of water, boiling point of this solution should be:**

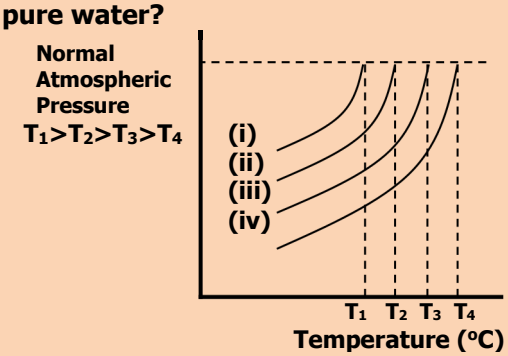
A) 100.52 °C
B) 100.00 °C
C) 100.052 °C
D) Less than 100 °C

Q.6 **Molal freezing point constant of water is:**

A) 1.86
B) 2.86
C) 11.86
D) 0.52

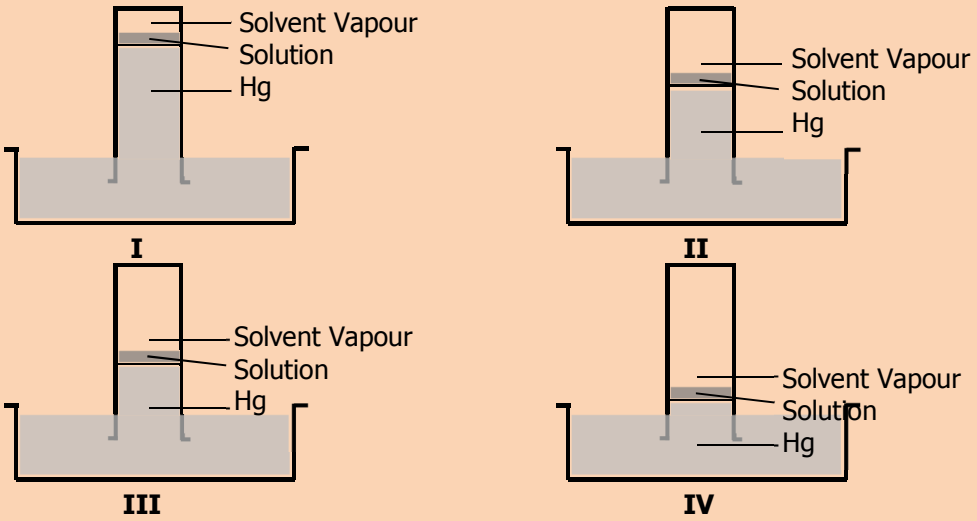
2014

Q.7 **The vapor pressure lines for pure as well as solutions of different concentrations are shown. Which line represents pure water?**



A) (i)
B) (ii)
C) (iii)
D) (iv)

Q.8 **One mole of glucose was dissolved in 1 kg of water, ethanol, ether and benzene separately and the molal boiling point constant of each individual solution was found to be 0.52, 1.75, 2.16 and 2.70 in the units of / °C kg mol^{-1} respectively. Which of the following figures shows benzene as solvent in solution?**



A) I
B) II
C) III
D) IV

2015

Q.9 **10.0 grams of glucose are dissolved in water to make 100 cm^3 of its solution, its molarity is:**
A) 0.55
B) 0.1
C) 10
D) 1

Q.10 **Given solution contains 16.0 g of CH_3OH, 92.0 g of C_2H_5OH and 36 g of water. Which statement about mole fraction of the components is true?**
A) Mole fraction of CH_3OH is highest among all components
B) Mole fraction of C_2H_5OH and H_2O is the same
C) Mole fraction of CH_3OH and C_2H_5OH is same
D) Mole fraction of H_2O is the lowest among all

2016

Q.11 **Freezing point will also be defined as that temperature at which its solid and liquid phases have the same:**
A) Concentration
B) Ratio between the particles
C) Vapour pressure
D) Attraction between the phases

Q.12 **What mass of NaOH is present in 0.5 mol of sodium hydroxide?**
A) 40 gm
B) 2.5 gm
C) 15 gm
D) 20 gm

ANSWERS						
	Q.1	B	**Q.5**	C	**Q.9**	A
	Q.2	A	**Q.6**	A	**Q.10**	B
	Q.3	D	**Q.7**	A	**Q.11**	C
	Q.4	A	**Q.8**	A	**Q.12**	D

7A ELECTROCHEMISTRY

2011

Q.1 **In electrolytic cell, a salt bridge is used in order to:**

A) Pass the electric current
B) Prevent the flow of ions
C) Mix solution of two half cells
D) Allow movement of ions b/w two half cells

Q.2 **In all oxidation reactions, atoms of an element in a chemical species lose electrons and increase their:**

A) Oxidation states
B) Reductions
C) Electrode
D) Negative charges

2012

Q.3 **In electrolysis of aqueous $CuCl_2$, the metal deposited at cathode is**

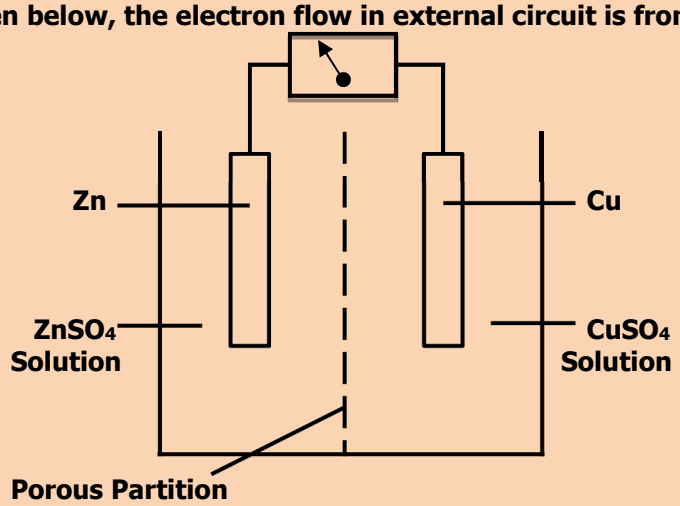
A) Sodium
B) Aluminium
C) Lead
D) Copper

Q.4 **In $MgCl_2$, the oxidation state of 'Cl' is**

A) Zero
B) +2
C) -2
D) -1

2013

Q.5 **In the figure given below, the electron flow in external circuit is from:**



A) Copper to zinc electrode
B) Right to left
C) Porous partition to zinc electrode
D) Zinc to copper electrode

Q.6 **Which one of the following is a redox reaction?**

A) $NaCl + AgNO_3 \longrightarrow NaNO_3 + AgCl_2$
B) $2Cl^- \longrightarrow Cl_2 + 2e^-$
C) $2Na + Cl_2 \longrightarrow 2NaCl$
D) $Na^+ + 1e^- \longrightarrow Na$

2014

Q.7 **In SO_4^{-2} the oxidation number of Sulphur is**

A) -8
B) +8
C) -6
D) +6

Q.8 **Coinage metals Cu, Ag, and Au are the least reactive because they have:**

A) Negative reduction potential
B) Positive reduction potential
C) Negative oxidation potential
D) Positive oxidation potential

2015

Q.9 **Study the following facts**

$$Zn \longrightarrow Zn^{+2} + 2e^- \qquad E^o = +0.76\ V$$

$$Cu \longrightarrow Cu^{+2} + 2e^- \qquad E^o = -0.34\ V$$

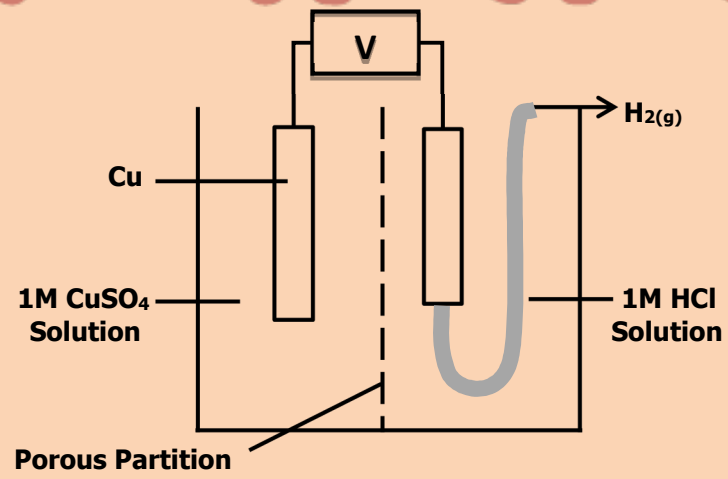
A) $Cu + Zn^{+2} \longrightarrow Cu^{+2} + Zn$
B) $Cu^{+2} + Zn^{+2} \longrightarrow Cu + Zn$
C) $Cu^{+2} + Zn \longrightarrow Cu + Zn^{+2}$
D) $Cu^{+2} + Zn^{+2} \longrightarrow Cu + Zn^{+2}$

Q.10 **Keeping in mind the electrode potential, which one of the following reactions is feasible?**

A) $Zn^{+2} + Cu \longrightarrow Cu^{+2} + Zn$
B) $Zn + MgSO_4 \longrightarrow ZnSO_4 + Mg$
C) $Fe + CuSO_4 \longrightarrow FeSO_4 + Cu$
D) $Cd + MgSO_4 \longrightarrow CdSO_4 + Mg$

2016

Q.11



The diagram shows a galvanic cell. The current will flow from:

A) Hydrogen electrode to copper electrode
B) Copper electrode to hydrogen electrode
C) Hydrogen electrode to HCl solution
D) $CuSO_4$ solution to hydrogen electrode

Q.12 **Study the following redox reaction:**

$$10Cl^- + 16H^+ + 2MnO_4^- \longrightarrow 5Cl_2 + 2Mn^{+2} + 8H_2O$$

A) Manganese is oxidized from +7 to +2
B) Chlorine ions are reduced from -1 to zero
C) Chlorine is reduced from zero to -1
D) Manganese is reduced from +7 to +2

ANSWERS				
	Q.1	D	**Q.7**	D
	Q.2	A	**Q.8**	B
	Q.3	D	**Q.9**	C
	Q.4	D	**Q.10**	C
	Q.5	D	**Q.11**	A
	Q.6	C	**Q.12**	D

8A CHEMICAL EQUILIBRIUM

2011

Q.1 **In 'AgCl' solution. Some salt of NaCl is added, 'AgCl' will be precipitated due to:**

A) Solubility
B) Electrolyte
C) Unsaturation effect
D) Common ion effect

Q.2 **'Ka' for an acid is higher, the stronger is the acid; relate the strength an acid with 'pKa'**

A) Higher pKa, weaker the acid
B) Lower pKa, stronger the acid
C) pKa has no relation with acid strength
D) Both A and B

2012

Q.3 **Formation of NH_3 is reversible and exothermic process, what will happen on cooling?**

A) More reactant will form
B) More N_2 will be formed
C) More H_2 will be formed
D) More product (NH_3) will be formed

Q.4 **A buffer solution is that which resists/minimizes the change in**

A) pOH
B) pH
C) pKa
D) pKb

2013

Q.5 **The chemical substance, when dissolved in water, gives "H^+" is called:**

A) Acid
B) Base
C) Amphoteric
D) Neutral

Q.6 **The 'pH' of our blood is:**

A) 6.7 – 8
B) 7.9
C) 7.5
D) 7.35 – 7.4

2014

Q.7 **The value of equilibrium constant (K_c) for the reaction $2HF_{(s)} \rightleftharpoons H_{2(g)} + F_{2(g)}$ is 10^{-13} at 2000 °C. Calculate the value of K_p for this reaction:**

A) 2×10^{-13}
B) 10^{-13}
C) 186×10^{-13}
D) 3.48×10^{-9}

Q.8 **What will be the pH of a solution of NaOH with a concentration of 10^{-3} M?**

A) 3
B) 14
C) 11
D) 7

2015

Q.9 **What is the correct relation between pH and pK?**

A) $pH = pKa + \log\left[\frac{Acid}{Base}\right]$

B) $pH = pKa - \log\left[\frac{Acid}{Base}\right]$

C) $pH = pKa - \log\left[\frac{Base}{Acid}\right]$

D) $pH = pKa + \log\left[\frac{Base}{Acid}\right]$

Q.10 **Which one of the following is the correct presentation for K_{sp}?**

$$AgCl \longrightarrow Ag^{+} + Cl^{-}$$

A) $K_{sp} = \frac{[AgCl]}{[Ag^{+1}]\ [Cl^{-1}]}$

B) $K_{sp} = [Ag^{+1}]\ [Cl^{-1}]$

C) $K_{sp} = \frac{[Ag^{+1}]\ [Cl^{-1}]}{[AgCl]}$

D) $K_{sp} = [AgCl]$

2016

Q.11 **Human blood maintains its pH between:**

A) 6.50 - 7.00
B) 7.20 - 7.25
C) 7.50 - 7.55
D) 7.35 - 7.40

Q.12 **Value of K_{sp} for $PbSO_4$ system at 25 °C is equal to:**

A) 1.6×10^{-5} mol^2dm^{-6}
B) 1.6×10^{-6} mol^2dm^{-6}
C) 1.6×10^{-8} mol^2dm^{-6}
D) 1.6×10^{-7} mol^2dm^{-6}

ANSWERS

Q.1	D	**Q.7**	B
Q.2	D	**Q.8**	C
Q.3	D	**Q.9**	B
Q.4	B	**Q.10**	B
Q.5	A	**Q.11**	D
Q.6	D	**Q.12**	C

9A REACTION KINETICS

2011

Q.1 **It is experimentally found that a catalyst is used to:**

A) Lower the activation energy
B) Increase the activation energy
C) Lower the pH
D) Decrease the temp of the reaction

Q.2 **According to collision theory of bimolecular reaction sin gas phase, the minimum amount of energy required for an effective collision is known as:**

A) Heat of reaction
B) Rate of reaction
C) Has no effect on the reaction
D) Energy of activation

2012

Q.3 **In some reactions, a product formed acts as a catalyst. The phenomenon is called**

A) Negative Catalysis
B) Activation of Catalyst
C) Hetergeneous catalysis
D) Autocatalysis

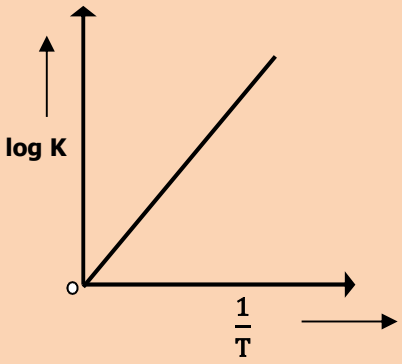
Q.4 **The reaction rate in forward direction decreases with the passage of time because**

A) Concentration of reactants decrease
B) Concentration of product decreases
C) The order of reaction changes
D) Temperature of the system changes

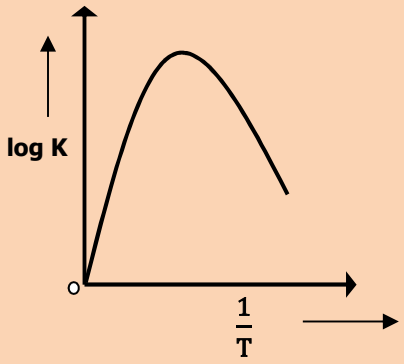
2013

Q.5 **By considering Arrhenius equation, the graph between '$\frac{1}{T}$' and 'log K' given a curve of the type:**

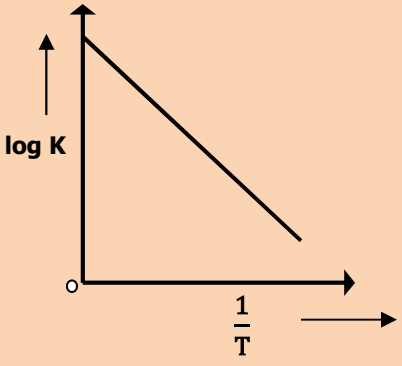
A)



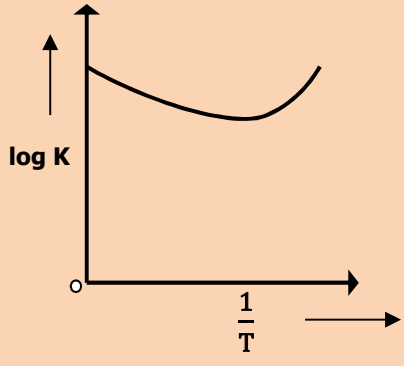
C)



B)



D)



Q.6 **In zero order reactions, the rate is independent of:**

A) Concentration of the product
B) Concentration of the reactant
C) Temperature of the reaction
D) Surface area of the product

2014

Q.7 **If the reactant or product of a chemical reaction can absorb ultraviolet, visible or infrared radiation, then the rate of a chemical reaction can best be measured by which one of the following methods?**

A) Chemical method
B) Spectrometry
C) Graphical method
D) Differential method

Q.8 **For the reaction $2NO + O_2 \rightleftharpoons 2NO_2$, the rate equation for the forward reaction is**

A) Rate = k $[NO]$ $[O_2]$
B) Rate = k $[NO]^2[O_2]$
C) Rate = k $[NO_2]^2$
D) Rate = k $[NO_2]$

2015

Q.9 **The half-life of N_2O_5 at 0 °C is 24 minutes. How long will it take for sample of N_2O_5 to decay to 25% of its original concentration?**

A) 24 minutes
B) 72 minutes
C) 120 minutes
D) 48 minutes

Q.10 **When the change in concentration is 6×10^{-4} mol dm^{-3} and time for that change is 10 seconds, the rate of reaction will be**

A) 6×10^{-3} mol dm^{-3} sec^{-1}
B) 6×10^{-4} mol dm^{-3} se^{-1}
C) 6×10^{-2} mol dm^{-3} sec^{-1}
D) 6×10^{-5} mol dm^{-3} sec^{-1}

2016

Q.11 **$2A + B \longrightarrow$ Product**
If the reactant 'B' is in excess, the order of reaction with respect to 'A' in given rate law, Rate = $k[A]^2[B]$ is:

A) 2nd order reaction
B) 1st order reaction
C) Pseudo 1st order reaction
D) 3rd order reaction

Q.12 **The rate constant 'k' is 0.693 min^{-1}. The half-life for the 1st order reaction will be:**

A) 1 min
B) 2 min
C) 0.693 min
D) 4 min

ANSWERS				
	Q.1	A	**Q.7**	B
	Q.2	D	**Q.8**	B
	Q.3	D	**Q.9**	D
	Q.4	A	**Q.10**	D
	Q.5	B	**Q.11**	A
	Q.6	B	**Q.12**	A

INORGANIC CHEMISTRY

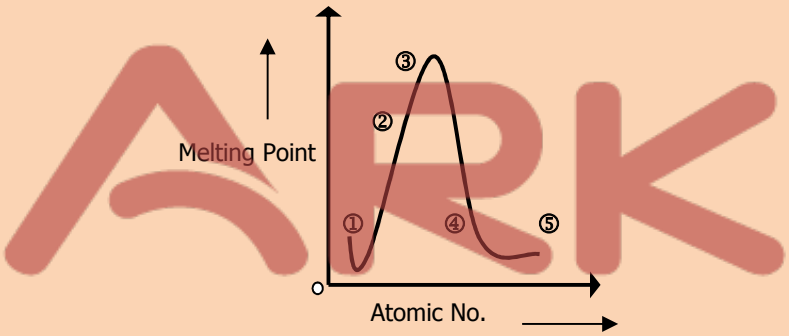
1B PERIODS

2011

Q.1 **Carbon exists as allotropes, which are different crystalline or molecular forms of the same substance. Graphite and diamond are allotropes of carbon. Diamond is a non-conductor whereas graphite is a good conductor because:**

A) Graphite has a layered structure
B) In graphite, all valence electrons are tetrahedrally bound
C) In graphite one of valence electron is free to move
D) Graphite is soft and greasy

Q.2 **The diagram below is a plot of melting points of elements of second period against their atomic numbers. Lithium and fluorine are placed at the extreme ends of the plot, on the basis of melting points where will you place Carbon among the empty slots on the plot?**



A) 1
B) 2
C) 4
D) 3

2012

Q.3 **Which one remains same along a period?**

A) Atomic radius
B) Melting point
C) Number of shells (orbits)
D) Electrical conductivity

Q.4 **More the ionization energy of an element:**

A) More the electropositivity
B) More the reducing power
C) Less the metallic character
D) Bigger the atomic radius

2013

Q.5 **What is the trend of melting and boiling point of the elements of short periods as we move from left to right in a periodic table?**

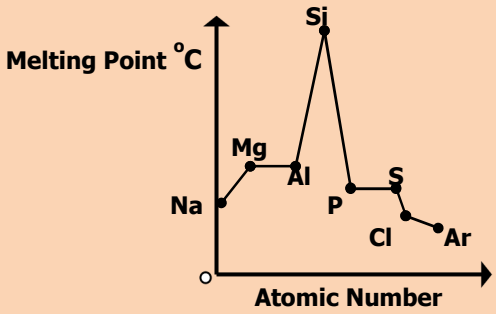
A) Melting and boiling points first decrease then increase
B) Melting and boiling points increase gradually
C) Melting and boiling points first increase then decrease
D) Melting and boiling points decrease gradually

Q.6 **Along a period, atomic radius decreases. This gradual decrease in radius is due to:**

A) Increase in number of electrons in valence shells
B) Increase in number of protons in the nucleus
C) Decrease in number of shells
D) Increase in number of shells

2014

Q.7 **The trends, in melting points of the elements of 3rd period, are depicted in figure below.**



The sharp decrease observed from 'Si' to 'P' is due to

A) Decrease in atomic radius from 'Si' to 'P'
B) Change in bonding and structure of two elements
C) Different universities of two elements
D) Increase in electron density from 'Si' to 'P'

Q.8 **Arrange the following elements according to the trend of ionization energies. (C, N, Ne, B)**

A) Ne < N < C < B
B) B < N < C < Na
C) B < C < N < Na
D) Ne < B < C < N

2015

Q.9 **Which one of the following will have the smallest radius?**

A) Al^{+3}
B) Si^{+4}
C) Mg^{+2}
D) Na^{+1}

Q.10 **Keeping in view the size of atoms, which order is correct?**

A) N > C
B) P > Si
C) Ar > Cl
D) Li > Be

2016

Q.11 **Melting points of group II-A elements are higher than those of group I-A because:**

A) Atoms of II-A elements have smaller size
B) II-A elements are more reactive
C) Atoms of II-A elements provide two binding electrons
D) I-A elements have smaller atomic radius

Q.12 **The ionic radius of fluoride ion is:**

A) 72 pm
B) 95 pm
C) 136 pm
D) 157 pm

ANSWERS

Q.1	C	**Q.5**	C	**Q.9**	B
Q.2	D	**Q.6**	D	**Q.10**	D
Q.3	C	**Q.7**	B	**Q.11**	C
Q.4	C	**Q.8**	C	**Q.12**	C

2B GROUPS

2011

Q.1 **When elements of group II-A (alkaline earth metals) are exposed to air, they quickly become coated with a layer of oxide. What is the purpose of this oxide layer?**

A) The oxide layer exposes the metal to Atmospheric attack
B) The oxide layer increases the reactivity of metal
C) The oxide layer protects the metal from further atmospheric attack
D) The oxide layer gives the metal a shiny silvery appearance

Q.2 **In silicon dioxide each silicon atom is tetrahedrally bonded to four oxygen atoms and each oxygen atom is bonded to two silicon atoms. The ratio of silicon to oxygen atoms is:**

A) 2:2
B) 1:2
C) 2:1
D) 1:4

2012

Q.3 **Alkaline earth metal hydroxides decompose on heating. Which of the following reactions is a correct representation of this decomposition?**

A) $M(OH)_{2(s)} \longrightarrow MO_{(s)} + H_2O_{(l)}$
B) $MOH_{(s)} \longrightarrow M_2O_{(s)} + H_2O_{(l)}$
C) $2MOH_{2(s)} \longrightarrow 2MO_{(s)} + H_{2(l)}$
D) $4MOH_{(s)} \longrightarrow 4M_{(s)} + 2H_2O_{(l)} + O_2$

Q.4 **Carbon has the unique ability to form long chains by bonding with other carbon atoms. This property of self-linking in carbon is known as:**

A) Condensation
B) Polymerization
C) Cyclization
D) Catenation

2013

Q.5 **Alkaline earth metal oxides react with water to give hydroxides. The solubility of alkaline earth metal oxides in water increases as we move from top to bottom in a group. Which of the following alkaline earth metal oxides is least soluble in water?**

A) MgO
B) CaO
C) BaO
D) SrO

Q.6 **The electronic structure of carbon monoxide is represented as:**

A) :C⇌O:
B) :C≡Ö:
C) C⟹Ö:
D) Ċ≡Ö

2014

Q.7 **Radon is _____ emitter and being radioactive is used in _____ treatment in radiotherapy:**

A) β, cancer
B) α, cancer
C) α, kidney stone
D) β, kidney stone

Q.8 **Which one of the following noble gases is used for providing an inert atmosphere for welding?**

A) Helium
B) Neon
C) Argon
D) Krypton

2015

Q.9 **On the basis of oxidizing power of halogens, which reaction is possible?**

A) $I_2 + 2Cl^- \longrightarrow Cl_2 + 2I^-$
B) $Br_2 + 2I^- \longrightarrow I_2 + 2Br^-$
C) $Cl_2 + 2F^- \longrightarrow F_2 + 2Cl^-$
D) $I_2 + 2Br^- \longrightarrow Br_2 + 2I^-$

Q.10 **Which one of the following gases is used as mixture for breathing by sea divers?**

A) Oxygen and Nitrogen
B) Nitrogen and Helium
C) Helium and Oxygen
D) Helium and Hydrogen

2016

Q.11 **$2NaOH_{(aq)} + Cl_{2(g)} \longrightarrow NaCl + NaClO + H_2O$ proceed at:**

A) 500 °C
B) 200 °C
C) -10 °C
D) 15 °C

Q.12 **Which halogen molecule 'X_2' has lowest dissociation energy?**

A) Cl_2
B) Br_2
C) I_2
D) F_2

ANSWERS

Q.1	C	**Q.7**	B
Q.2	B	**Q.8**	A
Q.3	A	**Q.9**	B
Q.4	D	**Q.10**	C
Q.5	A	**Q.11**	D
Q.6	A	**Q.12**	D

3B TRANSITION ELEMENTS

2011

Q.1 **Hydrogenation of unsaturated oils is done by using:**

A) Finally divided nickel
B) Finally divided iron
C) Vanadium pentaoxide
D) Copper

Q.2 **Pick the correct statement:**

A) Chelates are usually more stable than ordinary complexes
B) Ordinary complexes are more stable than chelates
C) Monodentate ligands form the chelates
D) Chelates have no ring structures

2012

Q.3 **Oxidation state of 'Mn' in $KMnO_4$, K_2MnO_4, MnO_2 and $MnSO_4$ is in the order:**

A) +7, +6, +2, +4
B) +6, +7, +2, +4
C) +7, +6, +4, +2
D) +4, +6, +7, +2

Q.4 **Which pair of transition elements shows abnormal electronic configuration?**

A) Sc and Zn
B) Cu and Sc
C) Zn and Cu
D) Cu and Cr

2013

Q.5 **Which one pair has the same oxidation state of 'Fe'?**

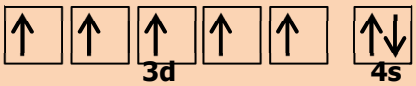
A) $FeSO_4$ and $FeCl_3$
B) $FeCl_2$ and $FeCl_3$
C) $FeSO_4$ and $FeCl_2$
D) $Fe_2(SO_4)_3$ and $FeSO_4$

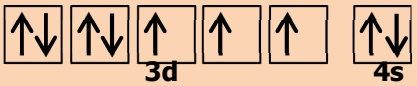
Q.6 **Oxidation state of 'Fe' in $K_3[Fe(CN)_6]$ is:**

A) +2
B) +3
C) -6
D) -3

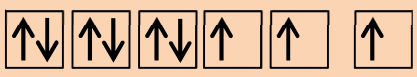
2014

Q.7 **Electronic configuration of Manganese (Mn) is**

A) Mn (Ar) 

C) Mn (Ar) 

B) Mn (Ar) 

D) Mn (Ar) 

Q.8 **The percentage of carbon in different types of iron products is in the order of**

A) Cast Iron > Wrought Iron > Steel
B) Wrought Iron > Steel > Cast Iron
C) Cast Iron > Steel > Wrought Iron
D) Cast Iron > Steel > Wrought Iron

2015

Q.9 **$[Ti(H_2O)_6]^{+3}$ transmits**

A) Yellow and Red light
B) Yellow and Blue light
C) Red and white light
D) Red and blue light

Q.10 **Electronic configuration of Gold [Au79] is**

A) [Xe] $4f^{14}$, $5d^{10}$, $6s^1$
B) [Xe] $4f^{10}$, $5d^{10}$, $6s^2$
C) [Xe] $4f^{14}$, $5d^9$, $6s^2$
D) [Xe]$4f^{14}$, $5d^{10}$, $6s^2$

2016

Q.11 **The anomalous electronic configuration shown by chromium and copper among 3-d series of elements is due to:**

A) Colour of ions of these metals
B) Variable oxidation states of metals
C) Stability associated with this configuration
D) Complex formation tendency of metals

Q.12 **Which element of 3d series of periodic table shows the electronic configuration of $3d^6$, $4s^2$?**

A) Copper
B) Cobalt
C) Zinc
D) Nickel

ANSWERS

Q.1	A	**Q.7**	A
Q.2	A	**Q.8**	C
Q.3	C	**Q.9**	D
Q.4	D	**Q.10**	A
Q.5	C	**Q.11**	C
Q.6	A	**Q.12**	D

4B ELEMENTS OF BIOLOGICAL IMPORTANCE

2011

Q.1 **In contact process, the catalyst used for the conversion of Sulphur dioxide to Sulphur trioxide is:**

A) Magnesium oxide
B) Aluminum oxide
C) Silicon dioxide
D) Vanadium pentoxide

Q.2 **The unpolluted natural rain water is slightly acidic due to the reaction of rain water with:**

A) Sulphur dioxide
B) Oxides of nitrogen
C) Carbon dioxide
D) Hydrogen present in air

Q.3 **In the Haber's process for the manufacturing of ammonia, nitrogen is taken from:**

A) Proteins occurring in living bodies
B) Ammonium salts obtained industrially
C) Air
D) Mineral containing nitrates

Q.4 **In comparison with oxygen gas, a strong triple bond is present between two nitrogen atoms in a molecule and therefore nitrogen gas is:**

A) Highly reactive gas
B) Completely inert like noble gases
C) Very less reactive gas
D) Moderately reactive gas

2012

Q.5 **The acid rain water has pH:**

A) Below 5
B) 7
C) Between 5 and 7
D) Between 7 and 14

Q.6 **In Contact Process for manufacturing sulphuric acid, Sulphur trioxide (SO_3) is not absorbed in water because**

A) The reaction does not go to completion
B) The reaction is highly exothermic
C) The reaction is quite slow
D) SO_3 is insoluble in water

Q.7 **In modern Haber Process Plants, the temperature maintained during the process is**

A) 670 – 770 K (400 °C – 500 °C)
B) 270 – 370 K (0 °C – 100 °C)
C) 370 – 470 K (100 °C – 200 °C)
D) 570 – 600 K (300 °C – 380 °C)

Q.8 **In the Haber process for manufacturing of ammonia, Nitrogen is taken from**

A) Proteins occurring in living bodies
B) Ammonium salts obtained industrially
C) Air
D) Minerals containing nitrates

2013

Q.9 **The nature of an aqueous solution of ammonia (NH_3) is:**

A) Amphoteric
B) Neutral
C) Acidic
D) Basic

Q.10 **Unpolluted rain water has a pH of:**

A) 4.9
B) 5.6
C) 5.3
D) 7.0

Q.11 **In comparison with oxygen gas, a strong triple bond is present between two nitrogen atoms in a molecule and therefore nitrogen gas is:**

A) Highly reactive gas
B) Completely inert like noble gases
C) Moderately reactive gas
D) Very less reactive gas

Q.12 **The catalyst used in the Haber's process is:**

A) Magnesium oxide
B) Aluminium oxide
C) Silicon oxide
D) Iron crystals with metal oxide promoters

2014

Q.13 **Which one of the following is correct equation of 1st ionization of sulphuric acid?**

A) $H_2SO_{4(aq)} + H_2O_{(l)} \longrightarrow 2H^+ + SO_4^{2-}$
B) $H_2SO_{4(aq)} + H_2O_{(l)} \longrightarrow H^+_{(aq)} + HSO_4^-$
C) $H_2SO_{4(aq)} + H_2O_{(l)} \longrightarrow 2H^+ + SO_4^{2-}$
D) $H_2SO_{4(aq)} + H_2O_{(l)} \longrightarrow H_3O^+ + SO_4^{2-}$

Q.14 **Which one of the following is the correct chemical reaction for Ammonia formation by Haber process?**

A) $N_{2(g)} + 3H_{2(g)} \longrightarrow 2NH_{3(g)}$
B) $2N_{(g)} + 3H_{2(g)} \rightleftharpoons NH_{3(g)}$
C) $2N_{(g)} + 3H_{2(g)} \longrightarrow 2NH_{3(g)}$
D) $N_{2(g)} + 3H_{2(g)} \rightleftharpoons 2NH_{3(g)}$

Q.15 **The pH of acid rain is**

A) 7
B) Between 5 and 7
C) Below 5
D) Between 7 and 14

Q.16 **Which one of the following products is obtained when sulphur trioxide is absorbed in concentrated sulphuric acid?**

A) Oleum
B) Aqua Regia
C) Hydrogen sulphide
D) Sulphate ion

2015

Q.17 **About 80% of ammonia is used for the production of**

A) Explosives
B) Fertilizers
C) Nylon
D) Polymers

Q.18 **Urea is the most widely used nitrogen fertilizer in Pakistan. Its composition Is**

A) NH_2CO
B) $N_2H_5CO_2$
C) $N_2H_4CO_2$
D) N_2H_4CO

Q.19 **During the manufacture of nitric acid, nitric oxide is oxidized to nitrogen dioxide. This reaction is given as:**

$$\mathbf{2NO_{(g)} + O_{2(g)} \rightleftharpoons 2NO_{2(g)} \quad \Delta H = -114\ kJ/mol}$$

According to Le Chatelier's Principle

A) Reaction must not be temperature dependent
B) Reaction must be carried out at room temperature
C) Reaction must be carried out at low temperature
D) Reaction must be carried out at high temperature

Q.20 **What is the percentage of nitrogen in NH_3NO_3?**

A) 65%
B) 35%
C) 20%
D) 58%

2016

Q.21 **The %age of nitrogen in ammonium nitrate is:**

A) 46%
B) 82%
C) 33%
D) 13%

Q.22 **Which one of the following is anhydride of sulphuric acid?**

A) Sulphur (II) oxide
B) Sulphur (VI) oxide
C) Iron pyrite
D) Sulphur (VI) oxide

Q.23 **During contact process of H_2SO_4 synthesis, the following reaction occurs:**

$$2SO_{2(g)} + O_{2(g)} \rightleftharpoons 2SO_{3(g)} \qquad \Delta H = -96\ kJmol^{-1}$$

Which step is used to increase the yield of SO_3?

A) Temperature is raised to very high degree
B) SO_3 formed is removed very quickly
C) Both temperature and pressure are kept very low
D) An excess of air is used to drive the equilibrium to the right side

Q.24 **Synthesis of ammonia by Haber's process is a reversible reaction. What should be done to increase the yield of ammonia in the following reaction?**

$$N_{2(g)} + 3H_{2(g)} \rightleftharpoons 2NH_{3(g)} \qquad \Delta H = -92\ kJmol^{-1}$$

A) Pressure should be decreased
B) Ammonia should remain in reaction mixture
C) Pressure should be increased
D) Concentration of nitrogen should be decreased

ANSWERS

Q.1	D	**Q.7**	A	**Q.13**	B	**Q.19**	C
Q.2	A	**Q.8**	C	**Q.14**	D	**Q.20**	B
Q.3	C	**Q.9**	A	**Q.15**	C	**Q.21**	C
Q.4	B	**Q.10**	B	**Q.16**	A	**Q.22**	D
Q.5	A	**Q.11**	D	**Q.17**	B	**Q.23**	D
Q.6	B	**Q.12**	D	**Q.18**	D	**Q.24**	C

ORGANIC CHEMISTRY

1C FUNDAMENTAL PRINCIPLES

2011

Q.1 **The compound with an atom, which has unshared pair of electrons is called:**

A) Nucleophile
B) Electrophile
C) Protophile
D) None of the above

Q.2 **1-chloropropane and 2-chlorpropane are isomers of each other, the type of isomerism in these two is called:**

A) Cis-trans isomerism
B) Chain isomerism
C) Position isomerism
D) Functional group isomerism

2012

Q.3 **Ethene on polymerization, gives the product polyethene. This reaction may be called as**

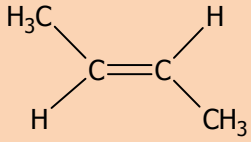
A) Addition
B) Condensation
C) Substitution
D) Pyrolysis

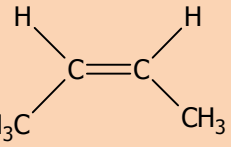
Q.4 **In the following, which one is free radical?**

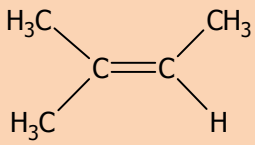
A) Cl^-
B) Cl^+
C) Cl_2
D) Cl^o

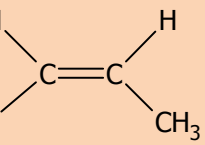
2013

Q.5 **The cis-isomerism is shown by:**

A) 

C) 

B) 

D) 

Q.6 **Select the nucleophile from the following examples:**

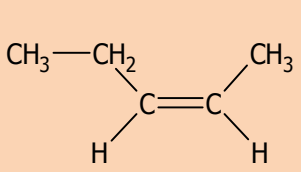
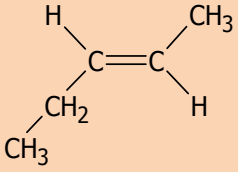
A) NO_2
B) NH_3
C) NO_2^+
D) N^+H_4

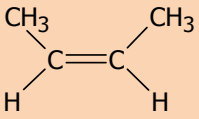
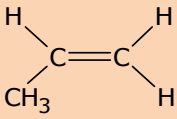
2014

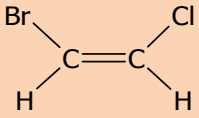
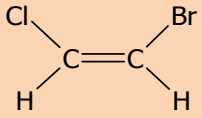
Q.7 **Which one of the following compound is a ketone?**

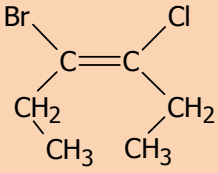
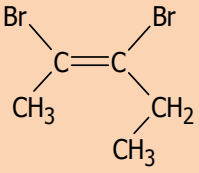
A) $CH_3 - O - CH_2 - CH_3$
B) $CH_3 - CO - CH_2 - CH_3$
C) $CH_3COCOOH$
D) $CH_3 - CH_2CHO$

Q.8 **Which one of the following pair of compounds is cis and trans isomers of each other?**

A) 


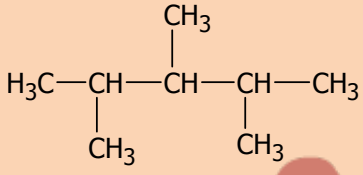
B) 


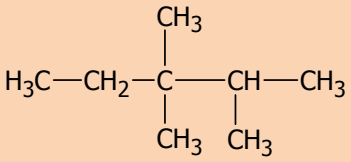
C) 


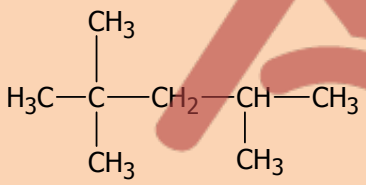
D) 


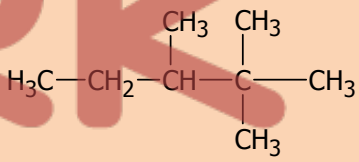
2015

Q.9 **The structural formula of 2,3,4 trimethylpentane is:**

A) 

C) 

B) 

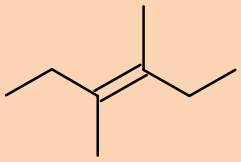
D) 

Q.10 **Which one of the following is a powerful electrophile used to attack on the electrons of benzene ring?**

A) $FeCl_2$
B) $FeCl_4^-$
C) Cl^+
D) C_{l2}

2016

Q.11 **Skeletal formula of an organic compound is given below:**



It is a hydrocarbon. IUPAC name of the compound is:

A) 3, 3-dimethyl-3-hexene
B) 3, 4-dimethyl-3-hexene
C) 3-hexene
D) 2,3-dimethyl-1-hexene

Q.12 **Which one of the following pairs can be cis-trans isomer to each other?**

A) $CHCl{=}CCl_2$ and $CH_2{=}CH_2$
B) $CHCl{=}CH_2$ and $CH_2{=}CHCl$
C) $CH_3{-}CH{=}CH{-}CH_3$ and $H_3C{-}CH{=}CH{-}CH_3$
D) $CH_3{-}CH_3$ and $CH_2{=}CH_2$

ANSWERS				
	Q.1	A	**Q.7**	B
	Q.2	C	**Q.8**	A
	Q.3	A	**Q.9**	A
	Q.4	D	**Q.10**	C
	Q.5	C	**Q.11**	B
	Q.6	B	**Q.12**	C

2C HYDROCARBONS

2011

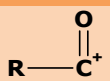
Q.1 **Benzene in the presence of $AlCl_3$ produces acetophenone when reacts with:**

A) Acetyl chloride
B) Acetic acid
C) Ethyl benzene
D) Ethanoic acid

Q.2 **The substitution of a '-H' by '-NO_2' group in benzene is called:**

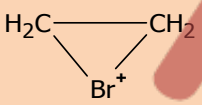
A) Nitration
B) Ammunolusis
C) Sulphonation
D) Reduction of benzene

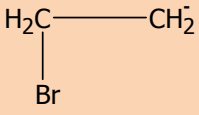
2012

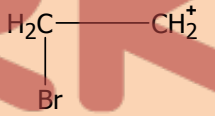
Q.3 **The introduction of**  **group in benzene is called**

A) Acylation
B) Carbonyl reduction
C) Alkylation
D) Formylation

Q.4 **In the reaction of ethane with bromine the intermediate formed is**

A) 

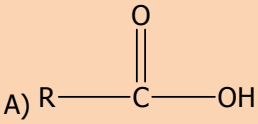
B) 

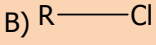
C) 

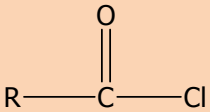
D) 

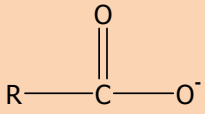
2013

Q.5 **The introduction of an alkyl group in benzene takes place in the presence of $AlCl_3$ and:**

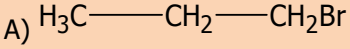
A) 

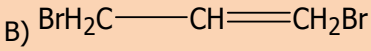
B) 

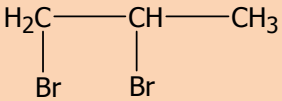
C) 

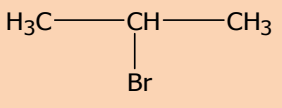
D) 

Q.6 **What is the product formed when propene reacts with HBr?**

A) 

B) 

C) 

D) 

2014

Q.7 **Addition of unsymmetrical reagent to an unsymmetrical alkene is governed by:**

A) Cannizzaro's Reaction
B) Kirchhoff Rule
C) Aldol Condensation
D) Markownikov's Rule

Q.8 **Ethylene glycols are used as**

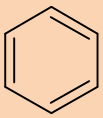
A) Anesthetic
B) Knocking agent
C) Freezing agent
D) Anti-freezing agent

2015

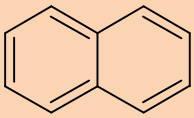
Q.9 **Order of reactivity of alkenes with hydrogen halide is:**

A) HBr > HI > HCl
B) HI > HBr > HF
C) HF > HI > HCl
D) HI > HBr > HCl

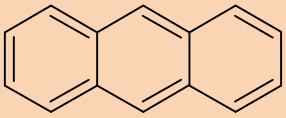
Q.10 **The given three hydrocarbons are**



Benzene



Naphthalene



Anthracene

A) Alicyclic hydrocarbons
B) Aromatic hydrocarbons
C) Acyclic Hydrocarbons
D) Heterocyclic hydrocarbons

2016

Q.11 **Which one of the following reactions shows combustion of a saturated hydrocarbon?**

A) $C_2H_4 + 3O_2 \longrightarrow 2CO_2 + 2H_2O$

B) $CH_4 + 2O_2 \longrightarrow CO_2 + 2H_2O$

C) $CH_4 + \frac{1}{2} O_2 \xrightarrow[400°C,\ 200\ atm]{Cu} CH_3OH$

D) $C_2H_2 + \frac{5}{2} O_2 \longrightarrow 2CO_2 + H_2O$

Q.12 **The average bond energy of C-Br is:**

A) 228 $kJmol^{-1}$
B) 200 $kJmol^{-1}$
C) 250 $kJmol^{-1}$
D) 290 $kJmol^{-1}$

ANSWERS

Q.1	A	**Q.7**	D
Q.2	A	**Q.8**	D
Q.3	A	**Q.9**	D
Q.4	A	**Q.10**	B
Q.5	B	**Q.11**	B
Q.6	D	**Q.12**	D

3C ALKYL HALIDES

2011

Q.1 **When purely alcoholic solution of sodium/potassium hydroxide and halogenoalkanes are reacted an alkene is formed, what is the mechanism of reaction?**

A) Elimination
B) Dehydration
C) Debromination
D) Reduction of benzene

Q.2 **The organic compound carbon tetrachloride is used as:**

A) Lubricant
B) Solvent
C) Oxidant
D) Plastic

2012

Q.3 **The alkaline hydrolysis of bromoethane shown below gives alcohol as the product:**

$$H_3C—CH_2—Br \longrightarrow H_3C—CH_2—OH$$

The reagent and the condition used in this reaction may be:

A) H_2O at room temperature
B) Ethanol, heat
C) KOH in alcohol
D) Dilute $NaOH_{(aq)}$ warm

Q.4 **In substitution reactions, dihaloalkane or secondary halogenoalkane give / show:**

A) S_N1 Mechanism
B) S_N2 Mechanism
C) Both E_1 and E_2
D) Both S_N1 and S_N2

2013

Q.5 **The order of reactivity of alkyl halides towards nucleophile is:**

A) RI > RBr > RF > RCl
B) RI > RBr > RCl > RF
C) RF > RCl > RBr > RI
D) RF > RBr > RCl > RI

Q.6 **Consider the reaction given below:**

$$H_3C—CH_2—CH_2—CH_2Br \longrightarrow H_3C—CH_2—CH_2—CH_2OH$$

$$H_3C—CH_2—CH=CH_2$$

Which statement is true?

A) Reagent for I is KOH in alcohol
B) Reagent for II is KOH in aqueous medium
C) Reaction I is Debromination
D) Reaction II is elimination

2014

Q.7 **The halothane used in hospitals as an anesthetic is chemically**

A) 1-Bromo-1-chloro-2, 2, 2-trifluroethane
B) 2-Bromo-2-chloro-1, 1, 1-trifluroethane
C) 1, 1, 1-Triflouro-2-bromo-2-chloroethane
D) 2-Chloro-2-bromo-1, 1, 1-triflouromoethane

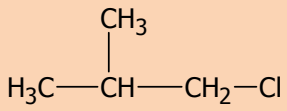
Q.8 **If halogenoalkanes are mixed with an excess of ethanoic ammonia and heated under pressure, amine are formed. Which amine is formed in the following reaction?**

$$CH_2CH_3Br + NH_3 \longrightarrow \text{Amine}$$

A) $CH_3—CH_2—NH—CH_2—CH_3$
B) $CH_3—CH_2—NH_2$
C) $CH_3—CH_2—CH_2—NH_2$
D) $H_2N—CH_2—CH_2—NH_2$

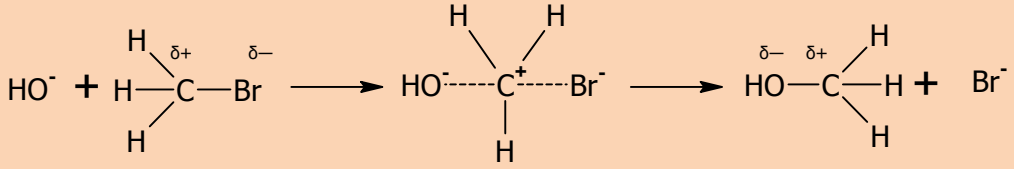
2015

Q.9 **The IUPAC name of the given compound is**



A) 1-Chloro-2-methylpropane
B) 1-Chloro-2-methylbutane
C) Isobutyl chloride
D) 2-Methyl-3-chloropropane

Q.10 **In the below reaction, the configuration of product is**



A) 100% same of the configuration of reactant
B) 50% retained
C) 50% inverted
D) 100% opposite from configuration of reactant

2016

Q.11 **Consider the reaction given below:**

$$CH_3CH_2Br \xrightarrow[\text{alcohol}]{KOH} H_2C{=}CH_2 + HBr$$

Mechanism followed by the reaction is:
A) E2
B) E1
C) S_N1
D) S_N2

Q.12 **Which one of the following is NOT a nucleophile:**
A) NH_2^-
B) H_2O
C) BF_3
D) CH_3^-

ANSWERS				
	Q.1	A	**Q.7**	B
	Q.2	B	**Q.8**	B
	Q.3	D	**Q.9**	A
	Q.4	D	**Q.10**	D
	Q.5	B	**Q.11**	A
	Q.6	D	**Q.12**	C

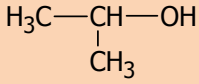
4C ALCOHOLS AND PHENOLS

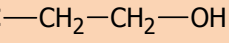
2011

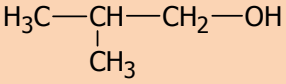
Q.1 **An alcohol is converted to an aldehyde with same number of carbon atoms as that of alcohol in the presence of $K_2Cr_2O_7/H_2SO_4$ the alcohol is:**

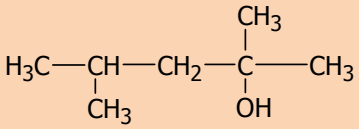
A) $CH_3Cl(CH)_2OH$
B) $CH_3CH_2CH_2OH$
C) $(CH_3)_3COH$
D) $(CH_3)_3CHOH$

Q.2 **Which of the following is a secondary alcohol?**

A) 

B) 

C) 

D) 

Q.3 **Which enzyme is involved in the fermentation of glucose:**

A) Zymase
B) Invertase
C) Urease
D) Diastase

Q.4 **Relative acidic strength of alcohol, phenol, water and carboxylic acid is:**

A) Carboxylic acid > Alcohol > Phenol > Water
B) Carboxylic acid > Phenol > Water > Alcohol
C) Phenol > Carboxylic acid > Alcohol > Water
D) Water > Alcohol > Phenol > Carboxylic acid

2012

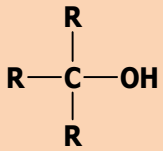
Q.5 **The dehydration of ethyl alcohol with concentrated H_2SO_4 at 140°C gives:**

A) Ethene
B) Diethyl ether
C) Alcohol
D) Carboxylic acid

Q.6 **Ethanol can be converted in to ethanoic acid by:**

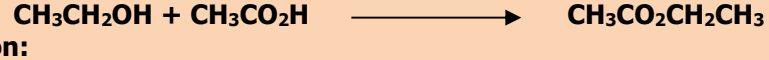
A) Oxidation
B) Fermentation
C) Hydration
D) Hydrogenation

Q.7 **The following structure is of:**



A) Secondary alcohol
B) Primary alcohol
C) Tertiary alcohol
D) Carboxylic acid

Q.8 **When ethanol is warmed with ethanoic acid in the presence of strong acid catalyst, an ester ethyl ethanoate is formed.**



During this reaction:

A) Alcohol is reduced
B) O–H bond in ethanoic acid is broken
C) O–H bond in ethanol is broken
D) Acid is oxidized

2013

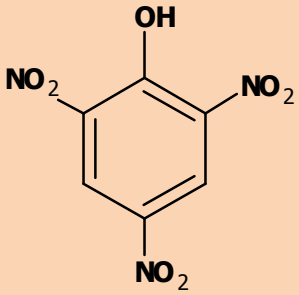
Q.9 **Consider the following reaction:**

$$C_2H_5OH + PCl_5 \longrightarrow ?$$

What product(s) may be formed?

A) C_2H_5Cl only
B) C_2H_5Cl and HCl
C) C_2H_5Cl, $POCl_3$ and HCl
D) C_2H_5Cl and $POCl_3$

Q.10

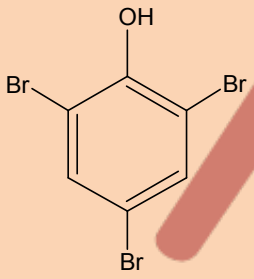


is named as:

A) Picric acid
B) Nitro phenol
C) Benzoic acid
D) Malonic acid

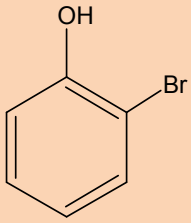
Q.11 **Aqueous phenol decolorizes bromine water to form a white precipitate. What is the structure of the white precipitate formed?**

A)

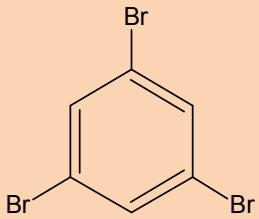


C)

B)



D)



Q.12 **The relative strength of carboxylic acid, water, ethanol and phenol has the following order of increasing acid strength:**

A) Carboxylic Acid > Phenol > Ethanol > Water
B) Carboxylic Acid > Phenol > Water > Ethanol
C) Phenol > Carboxylic Acid > Ethanol > Water
D) Water > Ethanol > Phenol > Carboxylic Acid

2014

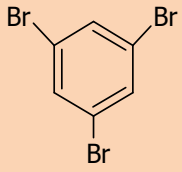
Q.13 **Primary, secondary and tertiary alcohols can be identified and distinguished by**

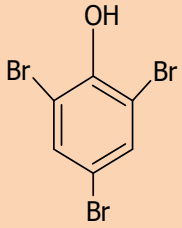
A) Lucas test
B) Iodoform test
C) Baeyer's test
D) Silver mirror test

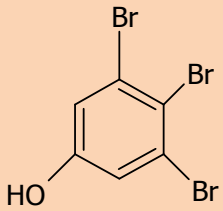
Q.14 **Which one of the following alcohol is indicated by formation of yellow crystals in Iodoform test?**

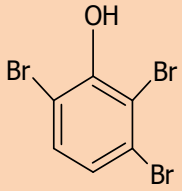
A) Methanol
B) Ethanol
C) Butanol
D) Propanol

Q.15 **The formula of 2, 4, 6-tribromo phenol is**

A) 

B) 

C) 

D) 

Q.16 **Which one of the following groups is indicated when HCl is formed by reaction of ethanol with phosphorous pentachloride?**

A) Amino group
B) Hydroxyl group
C) Halide group
D) Hydride group

2015

Q.17 **Which one of the following was used as one of the earliest antiseptic and disinfectant?**

A) Phenol
B) Ether
C) Ethanol
D) Methanol

Q.18 **Which one of the following is NOT able to denature the ethanol?**

A) Methanol
B) Lactic acid
C) Pyridine
D) Acetone

Q.19 **How will you distinguish between methanol and ethanol?**

A) By Lucas test
B) By silver mirror test
C) By oxidation
D) By Iodoform test

Q.20 **To produce absolute alcohol (100%) from rectified spirit (95.6% alcohol), the remaining 4.4% water must be removed by a drying agent such as**

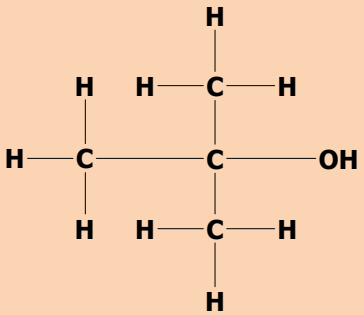
A) Calcium oxide
B) Calcium chloride
C) Calcium carbonate
D) Carbon monoxide

2016

Q.21 **Which one of the following is an appropriate indication of positive iodoform test?**

A) Formation of H_2O
B) Release of H_2 gas
C) Brick red precipitate
D) Yellow crystal

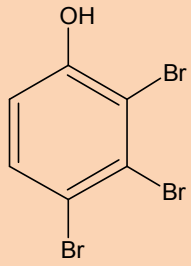
Q.22

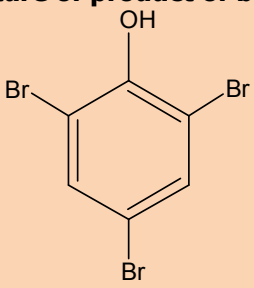


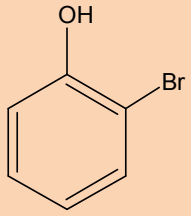
Which one of the following is the proper classification of above formula:

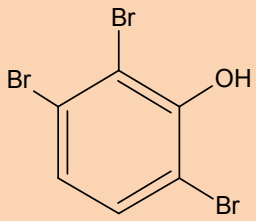
A) Primary
B) Secondary
C) Tertiary
D) Polyhydride

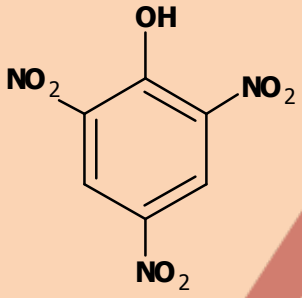
Q.23 **Which one of the following is an appropriate structure of product of bromination?**

A) 

C) 

B) 

D) 

Q.24 

Which one of the following is an appropriate name of above compound?

A) 1,3,6-Trinitrophenol
B) m-Nitrophenol
C) Tartaric acid
D) Picric acid

ANSWERS								
	Q.1	B	**Q.7**	A	**Q.13**	A	**Q.19**	D
	Q.2	A	**Q.8**	C	**Q.14**	B	**Q.20**	A
	Q.3	A	**Q.9**	B	**Q.15**	B	**Q.21**	D
	Q.4	B	**Q.10**	A	**Q.16**	B	**Q.22**	C
	Q.5	B	**Q.11**	A	**Q.17**	A	**Q.23**	C
	Q.6	A	**Q.12**	B	**Q.18**	B	**Q.24**	D

5C ALDEHYDES AND KETONES

2011

Q.1 **Consider the following reaction:**

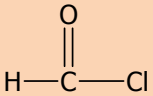
This reaction represents one of the following tests.

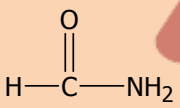
A) Fehling test
B) Benedict test
C) Ninhydrin test
D) Tollens test

Q.2 **In the below reaction, the nucleophile is:**

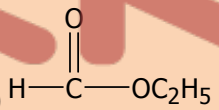
A) CN^-
B) HCl
C) Cl
D) OH

Q.3 **Which one of the following compound belongs to the homologous series of aldehydes?**

A) 

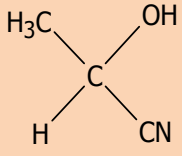
B) 

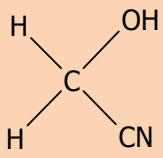
C) 

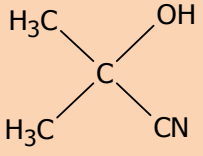
D) 

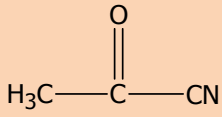
2012

Q.4 **Formaldehyde reacts with HCN (NaCN + HCl) to give a compound:**

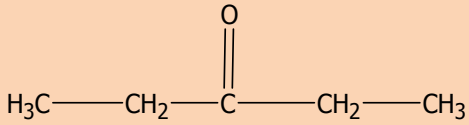
A) 

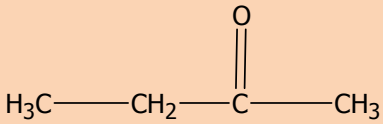
B) 

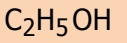
C) 

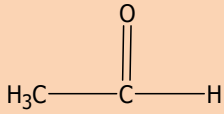
D) 

Q.5 **Iodoform test will not be positive with:**

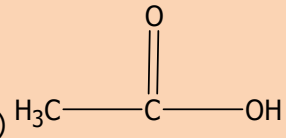
A) 

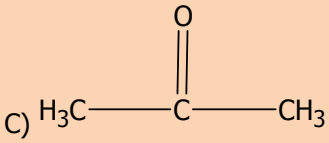
B) 

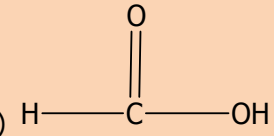
C) 

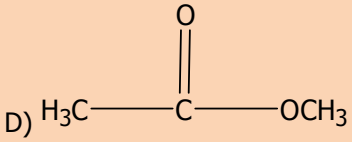
D) 

Q.6 **When $CH_3—CH_2—OH$ is oxidized in the presence of $K_2Cr_2O_7$ and H_2SO_4, the product formed is**

A) 

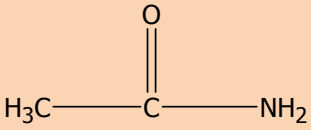
C) 

B) 

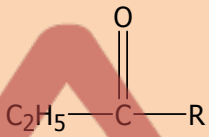
D) 

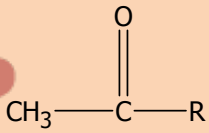
2013

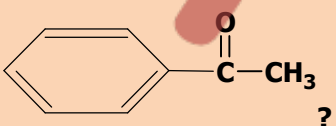
Q.7 **Which group gives a yellow precipitate of triiodo methane when warmed with alkaline aqueous iodine?**

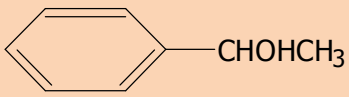
A) An amide group, 

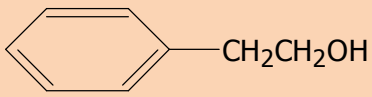
C) A primary Alcohol group as in Propanol
$CH_3–CH_2–CH_2–OH$

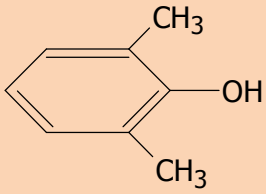
B) Ethyl Ketone group, 

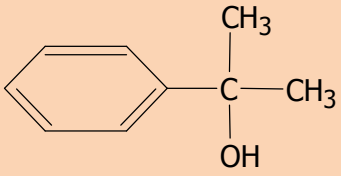
D) Methyl Ketone group, 

Q.8 **What is the structure of alcohol which on oxidation with acidified $Na_2Cr_2O_7$ gives**  **?**

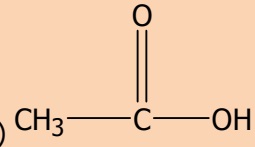
A) 

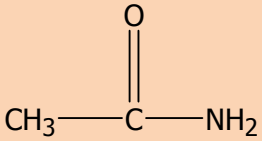
C) 

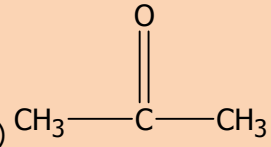
B) 

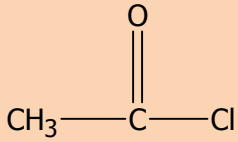
D) 

Q.9 **Which of the following is the structure of ketone?**

A) 

C) 

B) 

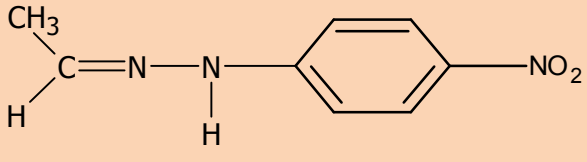
D) 

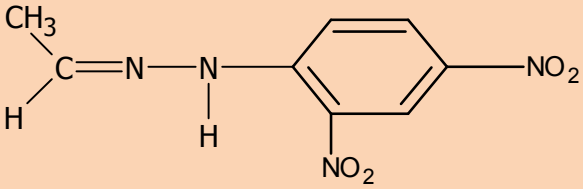
2014

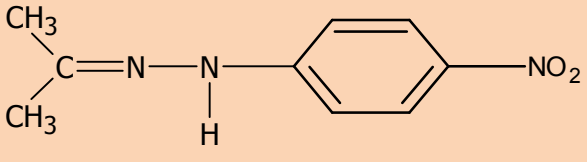
Q.10 **A student mixed ethyl alcohol with small amount of sodium dichromate and added it to the hot solution of dilute sulphuric acid. A vigorous reaction took place. He distilled the product formed immediately. What was the product?**

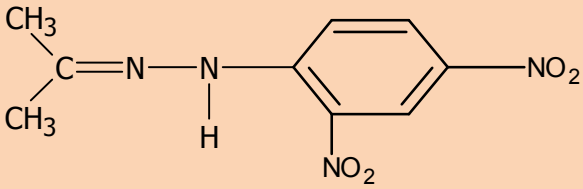
A) Acetone
B) Acetic acid
C) Dimethyl ether
D) Acetaldehyde

Q.11 **The structural formula of the product of reaction of acetone with 2, 4-dinitrophenyl hydrazine is:**

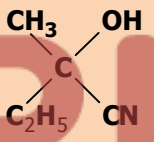
A)


C)


B)


D)


Q.12 **For the reaction:**



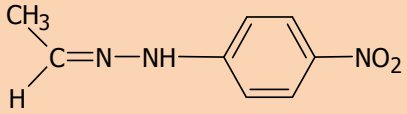
A) $C_2H_5COCH_3$
B) $C_2H_5CH(CH_3)OH$
C) CH_3COCH_3
D) $C_2H_5CH_2CHO$

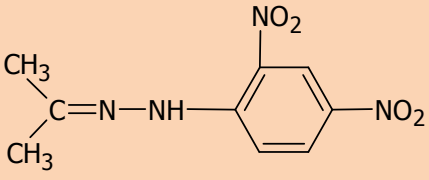
2015

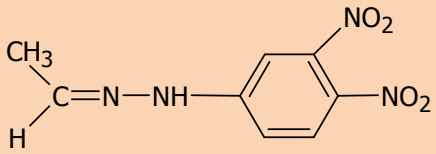
Q.13 **Which one of the following is also called silver mirror test?**

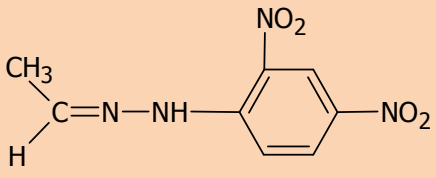
A) Fehling's solution test
B) Iodoform test
C) Tollen's reagent
D) Benedict's solution tests

Q.14 **When acetaldehyde reacts with 2,4-dinitrophenylhydrazine (2,4-DNPH), which one of the following products is formed?**

A)


C)


B)


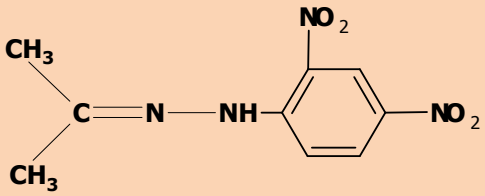
D)


Q.15 **Both aldehydes and ketones are planer to the neighborhoods of carbonyl (C=O) group. Which one of the following bonds is distorted towards the oxygen atoms?**

A) π-bond of C and O
B) Sigma bond of C and H
C) Sigma bond of C and O
D) Sigma bond of C and C

2016

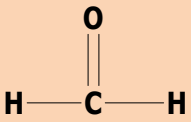
Q.16



It is the general formula of:

A) 2, 4-Dinitrophenyl hydrazine
B) 1, 3-Dinitrophenyl hydrazone
C) Phenyl hydrazone
D) 2, 4-Dinitrophenyl hydrazone

Q.17



Which one of the following is the IUPAC name of above given structure:

A) Propionaldehyde
B) Methanone
C) Acetaldehyde
D) Methanal

Q.18 **Which one of the following test is given by both aldehyde and ketone?**

A) Silver mirror test
B) Fehling's solution test
C) 2, 4 DNPH test
D) Benedict's solution test

ANSWERS

Q.1	D	**Q.7**	D	**Q.13**	C
Q.2	A	**Q.8**	A	**Q.14**	D
Q.3	C	**Q.9**	B	**Q.15**	A
Q.4	B	**Q.10**	D	**Q.16**	D
Q.5	A	**Q.11**	D	**Q.17**	D
Q.6	A	**Q.12**	A	**Q.18**	C

6C CARBOXYLIC ACIDS

2011

Q.1 **$CH_3COOH + PCl_5 \longrightarrow$?**
The products of the above reaction are:
A) $CH_3COI + POCl_3 + HCl$
B) $CH_3COI + POCl_2 + HCl$
C) $CH_3Cl + POCl_3 + HCl$
D) $CH_3COCl + POCl_3 + H_2$

Q.2 **$CH_3CN + HCl \longrightarrow$ A + B (in the presence of water)**
In the above reaction, A and B are:
A) Acetic acid and acid amide
B) Acetic acid and ammonia
C) Acetic acid and methyl chloride
D) Acetic acid and ammonium chloride

Q.3 **Consider the following reaction:**

$CH_3COOH + Mg$ (metal) $\longrightarrow$?

What product will form?
A) Magnesium formate
B) Magnesium acetate
C) Magnesium ion
D) Carboxylate ion

2012

Q.4 **In the below reaction the nucleophile which attacks on the carbon atom of acid is:**

$CH_3COOH + PCl_5 \longrightarrow H_3C-\overset{\overset{O}{\|}}{C}-Cl + POCl_3 + HCl$

A) OH^-
B) P
C) Cl^-
D) H^-

Q.5 **When ethanol chloride reacts with methylamine, an amide is formed. What is the structure of the amide formed?**

A) $H_3C-CH_2-\overset{\overset{O}{\|}}{C}-NH_2$
B) $H_3C-CH_2-\overset{\overset{O}{\|}}{C}-NHCH_3$
C) $H_3C-\overset{\overset{O}{\|}}{C}-NH_2$
D) $H_3C-\overset{\overset{O}{\|}}{C}-NHCH_3$

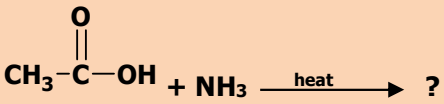
Q.6 **Primary alcohols normally give us aldehydes when oxidized in the presence of $Na_2Cr_3O_7$, what the product will be, when the secondary alcohols are oxidized in same conditions?**
A) Alkenes
B) Alkynes
C) Alkyl halides
D) Ketones

2013

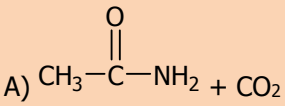
Q.7 **The formation of ester from acetic acid in presence of acid and ethanol is a:**
A) Nucleophilic substitution reaction
B) Nucleophilic addition reaction
C) Electrophilic substitution reaction
D) Electrophilic addition reaction

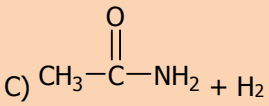
Q.8 **Methyl cyanides, on boiling with mineral acids or alkalis yield:**

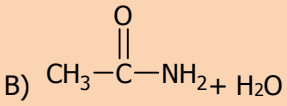
A) Acetic acid
B) Formic acid
C) Propanoic acid
D) Butanoic acid

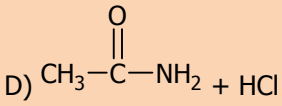
Q.9 

The final products formed are:

A) 

C) 

B) 

D) 

2014

Q.10 **Ethyl butyrate and butyl butanoate are esters with the flavor of**

A) Pear
B) Banana
C) Pineapple
D) Apple

Q.11 **Acetamide is formed by dehydration of**

A) Oxalic acid
B) Ethanoic acid
C) Butanoic acid
D) Propanoic acid

Q.12 **Organic compounds 'X' and 'Y' both can react with Na-Metal to evolve hydrogen gas. If 'X' and 'Y' react with each other form an organic compound 'Z' which gives fruity smell. What type of compound 'X', 'Y' and 'Z' are?**

	X	Y	Z
A)	Alcohol	Ester	Acetic Acid
B)	Alcohol	Ester	Mineral Acid
C)	Alcohol	Acetic Acid	Ester
D)	Alcohol	Mineral Acid	Ester

2015

Q.13 **'K_a' values of few organic acids are given:**

Acid	K_a Value
CH_3COOH	1.85×10^{-5}
CCl_3COOH	2.3×10^{-2}
$CHCl_2COOH$	5.0×10^{-3}
$CH_2ClCOOH$	1.3×10^{-3}

The order of acid strength is:

A) $CCl_3COOH > CHCl_2COOH > CH_2ClCOOH > CH_3COOH$
B) $CH_3COOH > CHCl_2COOH > CCl_3COOH > CH_2ClCOOH$
C) $CHCl_2COOH > CH_3COOH > CCl_3COOH > CH_2ClCOOH$
D) $CCl_3COOH > CH_3COOH > CHCl_2COOH > CH_2ClCOOH$

Q.14 **An organic acid 'z' reacts separately with sodium bicarbonate, sodium hydroxide and sodium carbonate. Which one of the following represent the structure of 'z'?**

A) $HCOOC_2H_5$
B) $CH_3—CH=CH_2$
C) CH_3CH_2OH
D) $H_3C—CH_2—COOH$

Q.15 **Carboxylic acids are rather hard to reduce, which powerful reducing agent can be used to convert them to the corresponding primary alcohol:**

A) $H_2SO_4/HgSO_4$
B) V_2O_5
C) $LiAlH_4$
D) $K_2Cr_2O_7/H_2SO_4$

2016

Q.16 $CH_3COOH + CH_3CH_2OH \rightleftharpoons CH_3COOC_2H_5 + H_2O$
Which one of the following will act as a catalyst in above reaction?

A) HNO_3
B) H_2SO_4
C) Acidified potassium dichromate
D) $SOCl_2$

Q.17 $CH_3COOH + PCl_5 \longrightarrow$ **?**
Which one of the following options shows the products of above reaction?

A) $POCl_2 + CH_3COCl_2 + HCl$
B) $POCl_3 + CH_3COCl_2 + H_2$
C) $CH_3COCl + POCl_2 + HCl$
D) $POCl_3 + CH_3COCl + HCl$

Q.18 **Which one of the following reaction of carboxylic acid is reversible?**

A) Esterification
B) Salt formation
C) Reaction with PCl_5
D) Reaction with $SOCl_2$

ANSWERS						
	Q.1	A	**Q.7**	A	**Q.13**	A
	Q.2	D	**Q.8**	A	**Q.14**	D
	Q.3	B	**Q.9**	B	**Q.15**	C
	Q.4	C	**Q.10**	C	**Q.16**	B
	Q.5	D	**Q.11**	B	**Q.17**	D
	Q.6	D	**Q.12**	C	**Q.18**	A

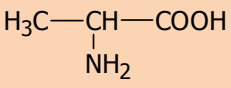
7C AMINO ACIDS

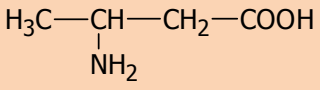
2011

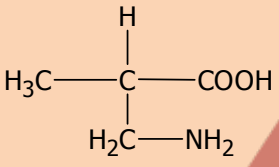
Q.1 **The —NH—CO is called:**

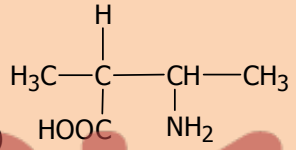
A) Amide group
B) Amino group
C) Protein linkage
D) Peptide linkage

Q.2 **Which one of the following is an alpha amino acid?**

A) 

C) 

B) 

D) 

Q.3 **Which of the following has an amino R-group?**

A) Lysine
B) Proline
C) Valine
D) Alanine

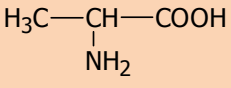
Q.4 **At intermediate value of pH, amino acids form Zwitter ions containing:**

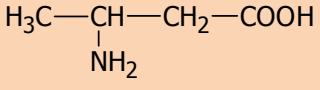
A) $-N^+H_3$ and $COO-$
B) $-NH_3$ and $COO-$
C) $-N^+H_3$ and $COOH$
D) $-NH_3$ and $COOH$

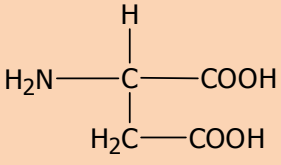
Q.5 **A polymer in which the number of amino acid residue is greater than 100 or molecular mass is greater than 1000, is known as:**

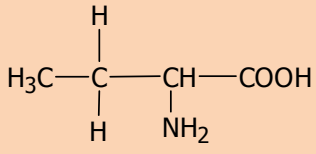
A) Protein
B) Polypeptide
C) Dipeptide
D) Tripeptide

Q.6 **Aspartic acid is an acidic amino acid, which has chemical formula:**

A) 

C) 

B) 

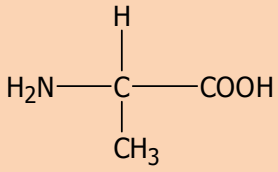
D) 

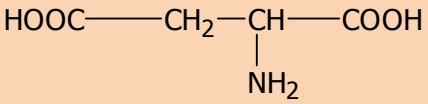
2012

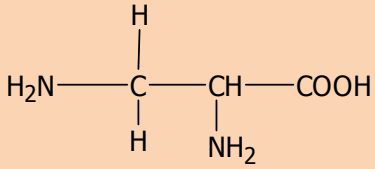
Q.7 **Organic compound containing both amine and carboxyl group is known as**

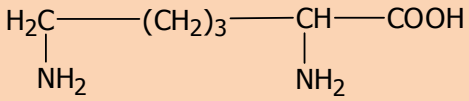
A) Amino acid
B) Fatty acid
C) Saccharide
D) Amide

Q.8 **Alanine is an amino acid which shows neutral effect on litmus paper, the formula of alanine may be**

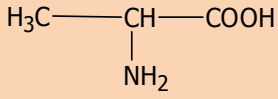
A) 

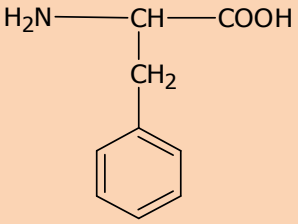
C) 

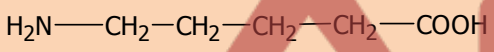
B) 

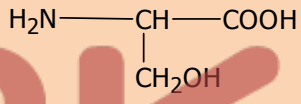
D) 

Q.9 **Which of the following structures is not an alpha amino acid?**

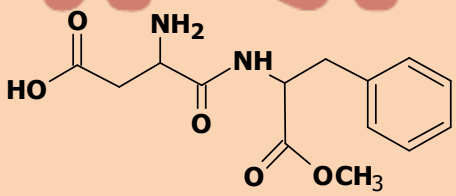
A) 

C) 

B) 

D) 

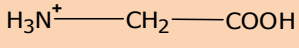
Q.10 **The skeletal formula of dipeptide formed between aspartic acid and phenylalanine is given below:**

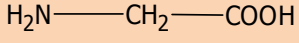


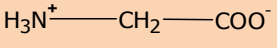
How many functional groups are present in its formula?

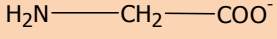
A) 1
B) 2
C) 4
D) 3

Q.11 **In basic conditions, amino acid exists in which of the following forms?**

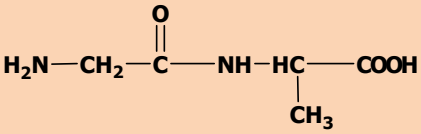
A) 

B) 

C) 

D) 

Q.12 **Structure of dipeptide is**



This is called:

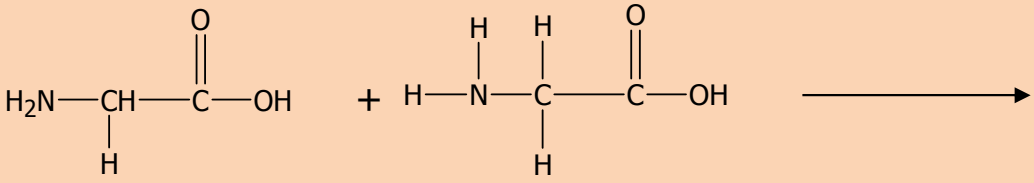
A) Glycyl glycine
C) Glycyl alanine
C) Alaninyl alanine
D) Alaninyl glycine

2013

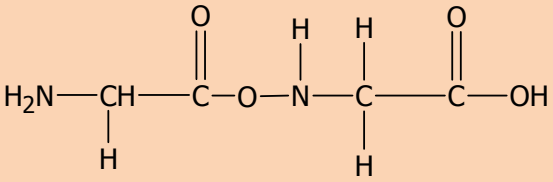
Q.13 **The amino acids which largely exist in dipolar ionic form are:**

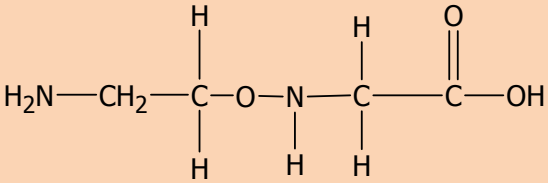
A) Acidic amino acids
B) Basic amino acids
C) Beta amino acids
D) Alpha amino acids

Q.14 **The reaction:**



Gives a product called dipeptide molecule represented by:

A)


C)


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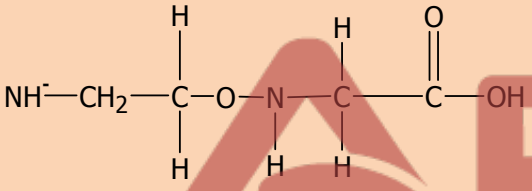

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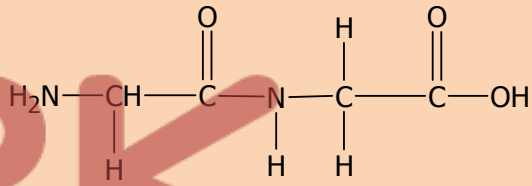


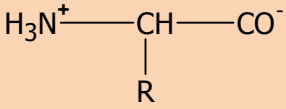
Q.15 **Two or more amino acids condensed to form protein by a peptide linkage which is resent between two atoms:**

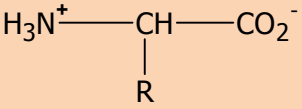
A) C and C
B) O and C
C) C and N
D) C and H

Q.16 **α-amino acids are compounds having carboxylic acid as well as amino functional groups attached to:**

A) Any H-atom in the molecule
B) Same carbon atom
C) Alternate carbon atoms
D) Neighboring carbon atoms

Q.17 **The formula of 'Zwitter ion' is represented by:**

A)


C)


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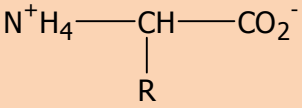

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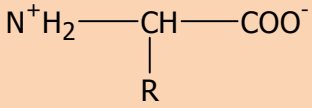
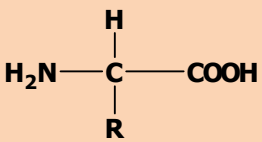




Q.18 **What is the name of amino acid, where 'R' is CH_3 group?**

A) Glycine
B) Lysine
C) Aspartic acid
D) Alanine

2014

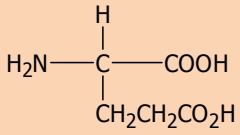
Q.19 **The amino acids which are not prepared in human body are called**

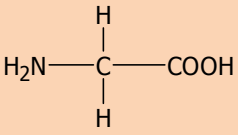
A) Essential amino acids
B) Non-essential amino acids
C) Alpha amino acids
D) Beta amino acids

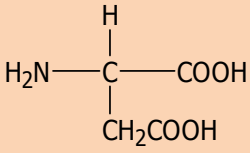
Q.20 **Indicate the cyclic amino acid from the following:**

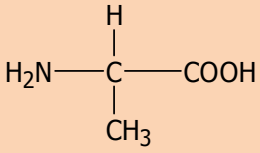
A) Cysteine
B) Serine
C) Haloamine
D) Proline

Q.21 **Which one of the following is Glutamic Acid?**

A) 

C) 

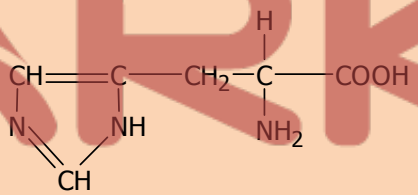
B) 

D) 

Q.22 **At low pH or in acidic condition amino acid exists as**

A) Anion
B) Cation
C) Zwitter ion
D) Neutral specie

Q.23 **The structure shown below represents:**



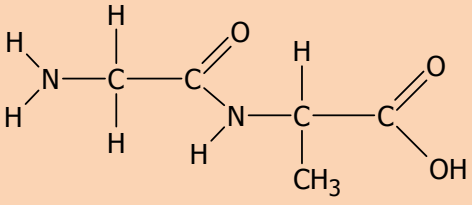
A) Proline
B) Histidine
C) Glycine
D) Lysine

Q.24 **Which one of the following reagent is used for identification of amino acids?**

A) Fehling's solution
B) Benedict's solution
C) Ninhydrin
D) Copper (II) Sulphate

2015

Q.25



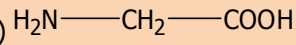
This structure is

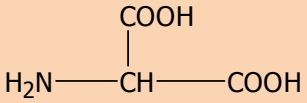
A) Gly-Ala (dipeptide)
B) Asp-Gly (dipeptide)
C) Gly-Val (dipeptide)
D) Asp-Val (dipeptide)

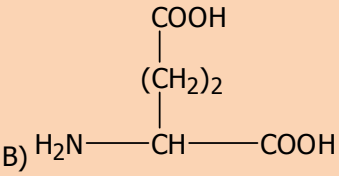
Q.26 **Which one of the following amino acids is basic in nature?**

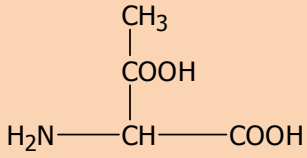
A) Glycine
B) Alanine
C) Lysine
D) Glutamic acid

Q.27 **Which one of the following structures shows the correct formula of glutamic acid?**

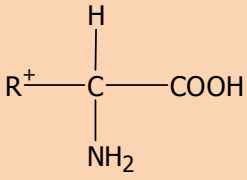
A) 

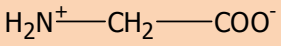
C) 

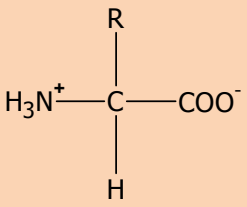
B) 

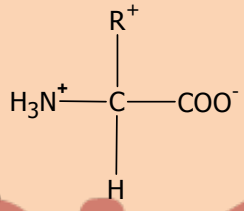
D) 

Q.28 **Select the correct Zwitter ionic structures of an amino acid.**

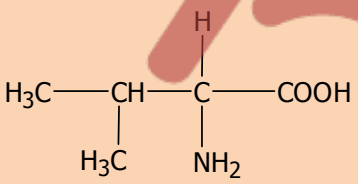
A) 

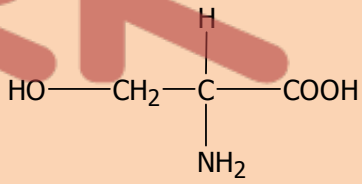
C) 

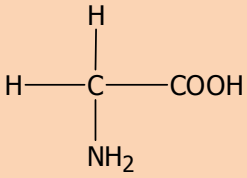
B) 

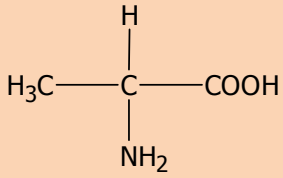
D) 

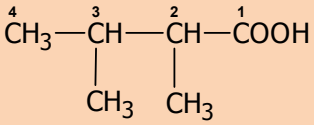
Q.29 **The structural formula for alanine is:**

A) 

C) 

B) 

D) 

Q.30 **In**  **which one is α-carbon atom?**

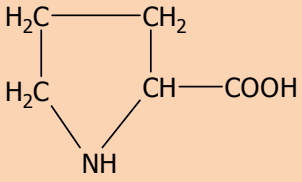
A) 1
B) 3
C) 2
D) 4

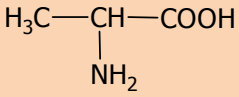
2016

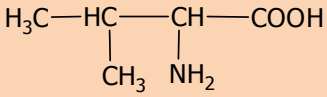
Q.31 **In the formation of Zwitter ion which one of the following donates the proton?**

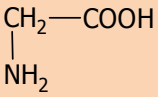
A) COOH
B) NH_2
C) CH_2COO^-
D) OH^-

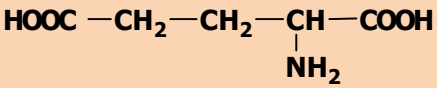
Q.32 **Which one of the following is structural formula of proline?**

A) 

C) 

B) 

D) 

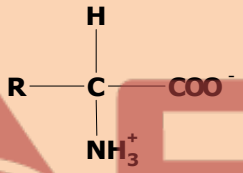
Q.33 

What is the name of above given structural formula?

A) Aspartic Acid
B) Asparagine
C) Adipic Acid
D) Glutamic Acid

Q.34 **Which one of the following is simplest amino acid?**

A) Lysine
B) Leucine
C) Alanine
D) Glycine

Q.35 

Select the best option indicating the name of the above structure:

A) Cation
B) Neutral amino acid
C) Internal salt
D) Anion

Q.36 **When acid is added to an amino acid, which one of the following will act as a base?**

A) NH_3^+
B) COO^-
C) H^+
D) R group

ANSWERS								
	Q.1	D	**Q.10**	C	**Q.19**	A	**Q.28**	B
	Q.2	A	**Q.11**	D	**Q.20**	D	**Q.29**	D
	Q.3	A	**Q.12**	B	**Q.21**	A	**Q.30**	C
	Q.4	A	**Q.13**	D	**Q.22**	B	**Q.31**	A
	Q.5	A	**Q.14**	A	**Q.23**	B	**Q.32**	A
	Q.6	B	**Q.15**	C	**Q.24**	C	**Q.33**	A
	Q.7	A	**Q.16**	B	**Q.25**	A	**Q.34**	D
	Q.8	A	**Q.17**	A	**Q.26**	C	**Q.35**	C
	Q.9	B	**Q.18**	D	**Q.27**	B	**Q.36**	B

8C MACROMOLECULES

2011

Q.1 **When hexane dioic acid is heated with hexamethylene diamine, the compound formed is:**
A) Polypeptide
B) Addition polymer
C) Ester
D) Nylon 6,6

Q.2 **Glucose and fructose are common examples of:**
A) Pentoses
B) Hexoses
C) Heptoses
D) Butoses

Q.3 **The reaction between fats and caustic soda is called:**
A) Hydrogenolysis
B) Fermentation
C) Carboxylation
D) Saponification

Q.4 **Macromolecules are described as large molecules built up from small repeating units known as:**
A) Monomers
B) Isomers
C) Metameres
D) Tautomer

Q.5 **Polyvinyl chloride is an example of:**
A) Addition polymer
B) Condensation polymer
C) Biopolymer
D) Thermosetting polymer

Q.6 **Terylene, a polyester is an example of:**
A) Biopolymer
B) Lipids
C) Condensation polymer
D) Addition polymer

2012

Q.7 **The principle energy storage carbohydrate in animal's is**
A) Glucose
B) Starch
C) Protein
D) Glycogen

Q.8 **Starch is a polymer of**
A) β–D–glucose
B) α– –glucose
C) γ–D–glucose
D) α–L–glucose

Q.9 **The reaction between fats and caustic soda is called**
A) Hydrogenolysis
B) Fermentation
C) Esterification
D) Saponification

Q.10 **Adipic acid and hexamethylene diamine both of which have _____ carbon atoms:**
A) Seven
B) Eight
C) Six
D) Four

Q.11 **Lactose is a sugar present in milk. It is an example of**
A) Disaccharides
B) Monosaccharides
C) Polysaccharides
D) Starch

Q.12 **Macromolecules are described as large molecules built up from small repeating units called:**
A) Monomers
B) Isomers
C) Metamers
D) Tautomers

2013

Q.13 **Polyvinyl acetate (PVA) is colourless and non-toxic resin used as an adhesive and as a binder for making:**
A) Toys
B) Gramophone recorders
C) Compact discs
D) Emulsion pains

Q.14 **Both ribose and deoxyribose are monosaccharides containing _____ carbon atoms.**
A) Four
B) Six
C) Five
D) Seven

Q.15 **The increased quantities of cholesterol in blood make plaque like deposits in the arteries causing:**
A) Cholera
B) Down's syndrome
C) Heart attack
D) Phenylketonuria

Q.16 **Polyvinyl chloride is an example of:**
A) Condensation polymer
B) Addition polymer
C) Biopolymer
D) Thermosetting polymer

Q.17 **Collagen is a fibrous protein present most abundantly in:**
A) Hair
B) Nail
C) Tendons
D) Arteries

Q.18 **Animals store glucose in the form of glycogen in:**
A) Stomach
B) Mouth
C) Liver and muscles
D) Small intestine

2014

Q.19 **Which one of the following is an example of condensation polymer?**
A) Polyvinylchloride
B) Polystyrene
C) Polyethene
D) Polyamide

Q.20 **Among the most common disaccharides, which one of the followings is present in the milk?**
A) Sucrose
B) Maltose
C) Fructose
D) Lactose

Q.21 **Fats are a type of lipid called glycerides. They are esters of long chain carboxylic acids:**
A) Propene-1, 2, 3-triol
B) Propane-1, 2, 3-triol
C) Propene-1, 2, 3-diol
D) Propane-1, 2, 3-diol

Q.22 **Which one of the following base is NOT present in RNA?**
A) Cytosine
B) Adenine
C) Thymine
D) Guanine

Q.23 **Collagen proteins are present in _____ throughout the body**
A) Muscle
B) Red blood cells
C) Tendons
D) Blood plasma

Q.24 **Polystyrene is an addition polymer. Which one of the following structures represents the monomer of polystyrene?**
A) $CH_2{=}CH_2$
B) $CH_2{=}CH{-}CH_3$
C) $CH_2{=}CH{-}Cl$
D) $CH_2{=}CH{-}C_6H_5$

2015

Q.25 **The specific substances (metabolite) that fits on the enzyme surface and is converted to products is called**

A) Co-factor
B) Prosthetic group
C) Isoenzyme
D) Substrate

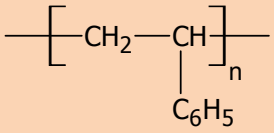
Q.26 **Polymide is formed due to the condensation od hexane-dioic acid with**

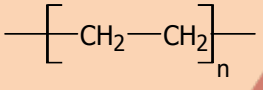
A) Hexane-1,5-diamine
B) Hexane-1,6-diamine
C) Hexane-1,4-diamine
D) Hexane-2,5-diamine

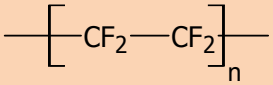
Q.27 **Haemoglobin is a**

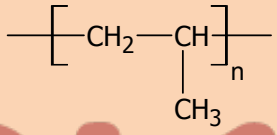
A) Genetic protein
B) Building protein
C) Transport protein
D) Structural protein

Q.28 **Which one of the following polymer is polystyrene?**

A) 

B) 

C) 

D) 

Q.29 **Out of these which nitrogen base is NOT present in DNA?**

A) Adenine
B) Guanine
C) Uracil
D) Thymine

Q.30 **Which one of the following is an example of co-polymer?**

A) Polyamide
B) Polystyrene
C) Polyvinyl acetate
D) Polyvinyl chloride

2016

Q.31 **Which one of the following polymer is called as Nylon 6,6?**

A) Polyester
B) Polyvinyl chloride
C) Polyamide
D) Polyvinyl acetate

Q.32 **Which one of the following is an exact composition of a carbohydrates?**

A) Carbon and Hydrogen
B) Carbon and Oxygen
C) Carbon, Hydrogen and Oxygen
D) Hydrogen and Oxygen

Q.33 **Which one of the following nitrogen base is NOT present in DNA?**

A) Adenine
B) Guanine
C) Uracil
D) Cytosine

Q.34 **In the woody parts of trees, the %age of cellulose is:**

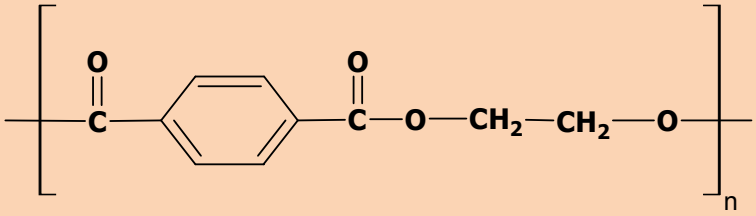
A) 50%
B) 10%
C) 30%
D) 100%

Q.35 **In laboratory experiment an unknown compound was added in test tube containing iodine, the colour became intense blue. What could be the unknown compound?**

A) Cellulose
C) Ribose

B) Raffinose
D) Starch

Q.36



Indicate the name of above given structure.

A) Nylon 6,6
B) Adipic Acid
C) PVA
D) Polyester

ANSWERS

Q.1	D	**Q.10**	C	**Q.19**	D	**Q.28**	A
Q.2	B	**Q.11**	A	**Q.20**	D	**Q.29**	C
Q.3	D	**Q.12**	A	**Q.21**	B	**Q.30**	A
Q.4	A	**Q.13**	D	**Q.22**	C	**Q.31**	C
Q.5	A	**Q.14**	C	**Q.23**	C	**Q.32**	C
Q.6	C	**Q.15**	C	**Q.24**	D	**Q.33**	C
Q.7	D	**Q.16**	B	**Q.25**	D	**Q.34**	D
Q.8	B	**Q.17**	C	**Q.26**	B	**Q.35**	D
Q.9	D	**Q.18**	C	**Q.27**	C	**Q.36**	C

9C ENVIRONMENTAL CHEMISTRY

2011

Q.1 **The suspected liver carcinogen which also has negative reproduction and developmental effect on humans is:**

A) Iodoform
B) Bromoform
C) Tropoform
D) Chloroform

Q.2 **Peroxyacetyl nitrate is an irritant to human beings and it effects:**

A) Nose
B) Stomach
C) Ears
D) Eyes

2012

Q.3 **The increase in concentration of oxidizing agents in smog like H_2O_2, HNO_3, PAN and ozone in the air is called**

A) Carbonated smog
B) Nitrated smog
C) Photochemical smog
D) Sulphonated smog

Q.4 **Which is the metal, whose elevated concentration is harmful for fish as it clogs the gills thus causing suffocation?**

A) Sodium
B) Lead
C) Zinc
D) Aluminium

2013

Q.5 **Aerobic decomposition of organic matter i.e. glucose by bacteria in water sediments produces:**

A) Propene
B) Ethane
C) Methane
D) Butane

Q.6 **The yellowish-brown color in photochemical smog is due to the presence of:**

A) Sulphur dioxide
B) Carbon monoxide
C) Carbon dioxide
D) Nitrogen dioxide

2014

Q.7 **_____ is an eye irritant.**

A) Peroxyacetyl nitrate
B) Peroxyacetyl nitrite
C) Peroxymethoxy aniline
D) Peroxyacetyl aniline

Q.8 **Which one of the following pollutants can cause death of a person by binding with haemoglobin of red blood cells?**

A) Chlorofluorocarbons
B) Oxides of Sulphur
C) Carbon monoxide
D) Oxides of nitrogen

2015

Q.9 **The biggest source of acid rain is the oxide of**

A) N
B) S
C) O
D) C

Q.10 **Burning of which one of the following waste is considered as useful industrial fuel or to produce electricity**

A) Metals
B) Grass
C) Paper
D) Plastic

2016

Q.11 **Ozone concentration is measured in:**

A) Debye units
B) Dupont units
C) Debacle units
D) Dobson units

Q.12 **The gas which is mainly produced in landfills from the waste is:**

A) CH_4
B) CO_2
C) SO_2
D) Cl_2

ANSWERS

Q.1	D	**Q.7**	A
Q.2	D	**Q.8**	C
Q.3	C	**Q.9**	B
Q.4	D	**Q.10**	D
Q.5	C	**Q.11**	D
Q.6	D	**Q.12**	A

2008-2016

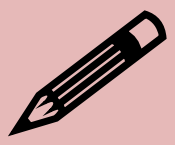
Medical College Aptitude Test - ENGLISH

UHS, Lahore

Past Papers Unit Wise MCQs

Ali Raza
ARK

Table of Specification



NO.	UNIT NAME	MCQs
1.	CHOOSE THE SUITABLE WORD	4
2.	SPOT THE ERROR	6
3.	CHOOSE THE CORRECT SENTENCE	10
4.	VOCABULARY (ESSENTIAL WORD POWER)	10
	TOTAL:	30

Contents

CHOOSE SUITABLE WORD

⟹ **CHOOSE THE SUITABLE WORD.**

2008

Q.1 **He was _____ of all valuable possessions.**
A) Robbed.
B) Stolen.
C) Pinched.
D) Established.

Q.2 **The presence of armed guards _____ us from doing anything disruptive.**
A) Defeated.
B) Excited.
C) Irritated.
D) Prevented.

Q.3 **Our flight was _____ from Lahore to Islamabad airport.**
A) Diverted.
B) Reflected.
C) Deflected.
D) Shifted.

Q.4 **I am _____ forward to our picnic scheduled in next month.**
A) Looking.
B) Planning.
C) Seeing.
D) Going.

2009

Q.5 **The traveler _____ a long detour to water the camels.**
A) Took
B) Saw
C) Sought
D) Made

Q.6 **Shah Jahan _____ the great mosque at Delhi.**
A) Founded
B) Raised
C) Created
D) Established

Q.7 **He was _____ of theft in the court.**
A) Charged
B) Reported
C) Blamed
D) Accused

Q.8 **He _____ on a very extraordinary ambition.**
A) Arrived
B) Decided
C) Came
D) Hit

2010

Q.9 **My advice had no _____ on him.**
A) Effect
B) Affect
C) Influence
D) Impression

Q.10 **Do not lose heart, it is just a _____ in the tea cup**
A) Wind
B) Cyclone
C) Blast
D) Storm

Q.11 **Pakistan _____ from voting against Iran in the United Nations**
A) Prevented
B) Detained
C) Abstained
D) Refused

Q.12 **Please _____ the door after you.**
A) Close
B) Shut
C) Leave
D) Knock

2011

Q.13 **She managed to _____ a ticket for the cricket match.**
A) Procure
B) Obscure
C) Improvise
D) Preclude

Q.14 **Things have got out of hand; we must take steps to _____ the situation**
A) Rectify
B) Pacify
C) Purify
D) Testify

Q.15 **George Orwell's animal farm is a stinging _____ on the Russian revolution**
A) Myth
B) Satire
C) Fallacy
D) Legend

Q.16 **All the _____ and ceremony of the royal wedding was telecast on the national television circuit.**
A) Festival
B) Romp
C) Pomp
D) Happiness

2012

Q.17 **He had a heart attack and all attempts to _____ him failed.**
A) Renew
B) Resuscitate
C) Revise
D) Refurnish

Q.18 **The _____ stench of dead animals and plants made Mumtaz ill.**
A) Putrid
B) Purified
C) Perturbed
D) Purchased

Q.19 **While going up the hills, by bus, she felt _____ inside.**
A) Fishy
B) Itchy
C) Queasy
D) Squeezy

Q.20 **The craft statesman manipulated the situation by making false promises and declaring sport festivities as a _____ to fool the public.**
A) Red-Hearing
B) Red-Feather
C) Red-Herring
D) Red-Haring

2013

Q.21 **Indolence gives vent to _____ disposition in human life.**
A) Static
B) Enthusiastic
C) Energetic
D) Filthy

Q.22 **The Quaid's _____ enthusiasm led the Muslims Indo-Pak to independence.**
A) Simplified
B) Latent
C) Onerous
D) Threatening

Q.23 **He _____ the incident to the back of his mind.**
A) Revered
B) Regulated
C) Reagitated
D) Relegated

Q.24 **He _____ the day they had bought such a large house**
A) Hues
B) Rows
C) Rues
D) Dues

2014

Q.25 **It is our national duty to _____ our vote in the general election.**
A) Throw
B) Cast
C) Drop
D) Refuse

Q.26 **She is intelligent enough to _____ things to serve her own purpose.**
A) Pick
B) Maneuver
C) Give
D) Take

Q.27 **She _____ about the excitement on hearing the news of her sister's wedding.**
A) Ran
B) Jigged
C) Talked
D) Wept

Q.28 **Everyone should be _____ duties and assignments according to his/her abilities.**
A) Prevented
B) Advised
C) Delegated
D) Suggested

2015

Q.29 **In spite of all the torture, the police has failed to _____ any confession from the thief.**
A) Convince
B) Elicit
C) Refuse
D) Agree

Q.30 **It is the duty of a teacher to _____ moral values in his students besides teaching.**
A) Tell
B) Record
C) Inculcate
D) Suggest

Q.31 **Many of the houses in Murree have basic _____.**
A) Amenities
B) Accuracy
C) Affinity
D) Array

Q.32 **Youngsters who indulge in love affairs are usually _____ in worldly manners.**
A) Adjoined
B) Addled
C) Adjured
D) Adhesive

2016

Q.33 **His theories have been _____ by recent research.**
A) Pronounced
B) Rearmed
C) Dammed
D) Debunked

Q.34 **International rules _____ the number of foreign entrants.**
A) Hoodwink
B) Stipulate
C) Fabricate
D) Traverse

Q.35 **The assassination of the president _____ the country into war.**
A) Articulated
B) Boomed
C) Hobbled
D) Precipitated

Q.36 **She might be forgiven for _____ beneath the pressure.**
A) Undertaking
B) Extricating
C) Buckling
D) Resounding

ANSWERS

Q.1	A	**Q.13**	A	**Q.25**	B
Q.2	D	**Q.14**	A	**Q.26**	B
Q.3	A	**Q.15**	B	**Q.27**	B
Q.4	A	**Q.16**	C	**Q.28**	C
Q.5	D	**Q.17**	B	**Q.29**	B
Q.6	A	**Q.18**	A	**Q.30**	C
Q.7	D	**Q.19**	C	**Q.31**	A
Q.8	D	**Q.20**	C	**Q.32**	B
Q.9	A	**Q.21**	A	**Q.33**	**X**
Q.10	D	**Q.22**	C	**Q.34**	B
Q.11	C	**Q.23**	D	**Q.35**	D
Q.12	B	**Q.24**	C	**Q.36**	C

2

SPOT THE ERROR

⟹ **SPOT THE ERROR: In the following sentences, some segments of each sentence are underlined. Your task is to identify that underlined segment of the sentence, which contains the mistake that needs to be corrected. Fill the Circle corresponding to that letter under the segment in the MCQ Response From.**

2008

Q.1 They did not guess how closely he had kept in touch with across the road.
A) B) C) D)

Q.2 He proved that if only germs were excluded of wounds, inflammation was averted.
A) B) C) D)

Q.3 The man felt his hair flutter and the tissues of his body drew tight as if he were standing at the centre of a vacuum.
A) B) C) D)

Q.4 He came to the hurdles that he remember, over which once he had so easy a victory.
A) B) C) D)

Q.5 What is meant by birth-rate and death-rate and how do the effect the population?
A) B) C) D)

Q.6 She had left him with a calmness and a poise that accord well with his own inward emotions.
A) B) C) D)

2009

Q.7 He is better than all the boys in the class, in studies as well as in sports, and bags big prizes in various field.
A) B) C) D)

Q.8 One must not depend too much upon one's hard work, as provident also plays its part.
A) B) C) D)

Q.9 His first adventure was to go round through the world at minimum cost.
A) B) C) D)

Q.10 He has been working in this department since the last five years without any break.
A) B) C) D)

Q.11 He reached at Lahore only a few days ago, on last Friday, to be exact, and is going to stay here for some time.
A) B) C) D)

Q.12 There was a big rally on the Mall, but as the crowd disintegrated, chaos and confusion ruled everywhere.
A) B) C) D)

2010

Q.13 Suddenly he stopped at the edge of the meadow, taking his pocket knife from his pocket, and cut a wisp of alfalfa.
A) B) C) D)

Q.14 The study of population growth indicates one of the greatest paradox of our time.
A) B) C) D)

Q.15 Among the Western nations, the decline in the death rate is followed after an interval by the reduction in the birth rate, so that the population is not now growing so fast.
A) B) C) D)

Q.16 In view of increasing hazards with our national security it is the duty of every citizen to keep a watch on his surroundings.
A) B) C) D)

Q.17 Thrifty housewives preserved their homegrown vegetables and fruits in canning, pickling or drying them for use during the cold weather.
A) B) C) D)

Q.18 When a low-wage category worker finds he has to maintain a large family, his expenses may exceeds his income.
A) B) C) D)

2011

Q.19 The patient's blood analysis shows that there is a big number of amorphous cells which are quiet unidentifiable.
A) B) C) D)

Q.20 The police, in their investigation, used coercive measure to get favorable statement from the accused.
A) B) C) D)

Q.21 Your argument is simply abstruse as there is no clarity of thought and coherence in ideas and it also lack vision.
A) B) C) D)

Q.22 The workers were raising much hue and cry when their demands were turned away.
A) B) C) D)

Q.23 The disease is uncurable without the judicious use of antibiotics.
A) B) C) D)

Q.24 The younger sister hopes to emulate her elder sister's sporting achievement as she is putting up hectic effort.
A) B) C) D)

2012

Q.25 The theory was discarded as there was no corroborating evidence for its favour.
A) B) C) D)

Q.26 The workers were raising much hue and cry when their demands were turned away.
A) B) C) D)

Q.27 Aslam was badly cudgeled from his step-brother. He received many bruises and contusions. Thank God! No injury was serious.
A) B) C) D)

Q.28 I extend a cordial invitation for you to visit our farm house. We have grown vegetables without chemical fertilizers over there.
A) B) C) D)

Q.29 Although he is not a close relative of me, yet I was greeted with a show of deep cordiality.
A) B) C) D)

Q.30 This antibiotic destroys red corpuscles in the blood and cause pernicious anaemia.
A) B) C) D)

2013

Q.31 Amjad was not conscious to the aberration he had committed in the public meeting. It was disliked by all and sundry.
A) B) C) D)

Q.32 Late Agha Shahi was an outstanding genius in the international affairs. He was gifted of the acumen to judge the future events, judge the future events in advance.
A) B) C) D)

Q.33 The old man was sitting quite bamboozled when the swindler deprived him from his pension money by his evil tricks.
A) B) C) D)

Q.34 The prime minister fired a broadside at the opposition leaders. A few of his remarks were not up at the mark.
A) B) C) D)

Q.35 Lucy is the diva which performance as an opera singer is peerless.
A) B) C) D)

Q.36 The police report exonerated Anwar of all charges of corruption and job was also restored
A) B) C) D)

2014

Q.37 We were ten miles up the highway when I happened to saw this classified advertisement in the newspaper.
A) B) C) D)

Q.38 "All is well what ends well", said the father when he had finished the story.
A) B) C) D)

Q.39 Rubber tubes upon which children had swing in backyards hung suspended like stopped clock pendulums in the blazing air.
A) B) C) D)

Q.40 The child was fully dressed and sitting in her father's lap near the kitchen table.
A) B) C) D)

Q.41 The three Abdal Rahman, like his illustrious predecessor, was a young man of twenty-three when he took office.
A) B) C) D)

Q.42 Enlarged and beautified by later Caliphs, Al-Zahra become the nucleus of a royal suburb whose remain partly evacuated in and after 1910, can still be seen.
A) B) C) D)

2015

Q.43 He picked up (A) one or two magazines and after a hurried (B) glance on (C) the contents carefully replaced (D) them.

Q.44 His guests found it fun (A) to watch (B) him to make (C) tea – mixing careful spoonful (D) from different caddies.

Q.45 You have put your life (A) in his hands (B) many a (C) times (D).

Q.46 Chips, thinking it over a good many time (A), always added to himself (B) that Kathie would have approved (C) and also have been amused (D).

Q.47 But the men (A) ate (B) their (C) supper in (D) good appetites.

Q.48 A common sense of (A) failure is a mistaken ambition of (B) the boys on (C) the part of (D) his parents.

2016

Q.49 It showed (A) that he was a man capable of (B) looking beneath (C) the surface of things, a man not dependent in (D) paper manifestations.

Q.50 When he was (A) a child, every time he were (B) naughty, his foster-mother used to (C) threaten to send him (D) to Timbuktu.

Q.51 I was faced with alternatively (A) of either (B) evicting the books or else (C) leaving them in sole, undisturbed tenancy and taking rooms (D) elsewhere for myself.

Q.52 I remember going to (A) the British museum one day to read for (B) the treatment for some slight ailment of which (C) I had (D) a touch-hay fever, I fancy it was.

Q.53 The number of people in the world are rapidly (A) increasing rather like a (B) gigantic snowball which not only gets bigger (C) as it rolls but goes faster (D) as well.

Q.54 It has been calculated (A) that unless the growth is checked (B), there will only be (C) enough room on the earth for people to stand by (D).

ANSWERS

Q.1	D	**Q.15**	C	**Q.29**	A	**Q.43**	C
Q.2	A	**Q.16**	A	**Q.30**	D	**Q.44**	C
Q.3	A	**Q.17**	A	**Q.31**	A	**Q.45**	C
Q.4	B	**Q.18**	D	**Q.32**	B	**Q.46**	A
Q.5	D	**Q.19**	D	**Q.33**	B	**Q.47**	D
Q.6	D	**Q.20**	A	**Q.34**	D	**Q.48**	D
Q.7	A	**Q.21**	D	**Q.35**	A	**Q.49**	D
Q.8	C	**Q.22**	D	**Q.36**	A	**Q.50**	B
Q.9	C	**Q.23**	A	**Q.37**	C	**Q.51**	A
Q.10	B	**Q.24**	D	**Q.38**	A	**Q.52**	B
Q.11	A	**Q.25**	D	**Q.39**	B	**Q.53**	A
Q.12	B	**Q.26**	D	**Q.40**	C	**Q.54**	D
Q.13	B	**Q.27**	A	**Q.41**	A		
Q.14	D	**Q.28**	A	**Q.42**	C		

CHOOSE CORRECT SENTENCE

⟹ **In each of the following question, four alternative sentences are given. Choose the CORRECT one and fill the Circle corresponding to that letter in the MCQ Response Form.**

2008

Q. 1

A) He lacked both the training and the equipment needed in the job.
B) He lacked both the training and the equipment needed by the job.
C) He lacked both the training and the equipment needed on the job.
D) He lacked both the training and the equipment needed for the job.

Q. 2

A) They tried to pacify him for kindness and affection.
B) They tried to pacify him in kindness and affection.
C) They tried to pacify him by kindness and affection.
D) They tried to pacify him with kindness and affection.

Q.3

A) Then he sat down in corner and remained queit.
B) Then he sat down in corner and remained quite.
C) Then he sat down in corner and remain quiet.
D) Then he sat down in corner and remained quiet.

Q.4

A) He was drenched with the hotness of his fear.
B) He was drenched in the hotness of his fear.
C) He was drenched by the hotness of his fear.
D) He was drenched off the hotness of his fear.

Q.5

A) Why did you disagree with me?
B) Why did you disagree to me?
C) Why did you disagree on me?
D) Why did you disagree by me?

Q.6

A) Do not stuff your head by things you do not understand.
B) Do not stuff your head with things you do not understand.
C) Do not stuff your head for things you do not understand.
D) Do not stuff your head in things you do not understand.

Q.7

A) A day later he reached his first glimpse of Lahore.
B) A day later he took his first glimpse of Lahore.
C) A day later he found his first glimpse of Lahore.
D) A day later he caught his first glimpse of Lahore.

Q.8

A) This will have a bad impact to the economy.
B) This will have a bad impact on the economy.
C) This will have a bad impact at the economy.
D) This will have a bad impact over the economy.

Q.9

A) It would save him from dying of thirst.
B) It would save him from dying from thirst.
C) It would save him from dying with thirst.
D) It would save him from dying by thirst.

Q.10

A) All this flashed by his mind in an instant of protest.
B) All this flashed on his mind in an instant of protest.
C) All this flashed through his mind in an instant of protest.
D) All this flashed by off mind in an instant of protest.

2009

Q.11

A) E-mail is a relatively new mean of communication.
B) E-mail is a relatively new mean to communication.
C) E-mail is a relatively new means of communication.
D) E-mail is a relatively new means to communication.

Q.12

A) As she said the computer was programmed by Mona.
B) Just like she said the computer was programmed by Mona.
C) As like she said the computer was programmed by Mona.
D) Just like she had she said the computer was programmed by Mona.

Q.13

A) The remains of the body were thrown into the sea.
B) The remain of the body was thrown into the sea.
C) The remains of the body were thrown to the sea.
D) The remains of the body was thrown into the sea.

Q.14

A) We will discuss your problem as soon as the committee will leave.
B) We will discuss your problem as soon as the committee left.
C) We will discuss your problem as soon as the committee may leave.
D) We will discuss your problem as soon as the committee leaves.

Q.15

A) Reaching for the book, the ladder slipped out from under him.
B) Reaching for the book, the ladder slipped out from him.
C) When he reached for the book, the ladder was slipped out from under him.
D) When he was trying to reach for the book, the ladder slipped from under him.

Q.16

A) After the sun has set behind the mountain, a cool breeze sprang up and brought relief from the heat.
B) After the sun had been set behind the mountain, a cool breeze sprang up and brought relief from the heat.
C) After the sun would set behind the mountain, a cool breeze would sprang up and brought relief from the heat.
D) After the sun set behind the mountain, a cool breeze sprang up and brought relief from the heat.

Q.17

A) Masood told me that he would hire more salesman if he is in my position.
B) Masood told me that he would hire more salesman if he has been in my position.
C) Masood told me that he would hire more salesman if he has my position.
D) Masood told me that he would hire more salesman if he had been in my position.

Q.18

A) He consumed his heart on this and washed away before the very eyes of the people.
B) He consumed his heart at this and washed away before the very eyes of the people
C) He consumed his heart for this and washed away before the very eyes of the people.
D) He consumed his heart over this and washed away before the very eyes of the people.

Q.19

A) They felt bad while leaving their friends.
B) They felt badly about leaving their friends.
C) They felt very badly about leaving their friends.
D) They felt badly while leaving their friends.

Q.20

A) He then struck the man himself a similar bow, which felled him on the earth like a log.
B) He then struck the man himself a similar bow, which felled him over the earth like a log.
C) He then struck the man himself a similar bow, which felled him to the earth like a log.
D) He then struck the man himself a similar bow, which felled him in the earth like a log.

2010

Q.21

A) This is different to what had been expected.
B) This is different what had been expected.
C) This is different from what had been expected.
D) This is different to what would be expected.

Q.22

A) He suddenly remembered that he has left his house unlocked.
B) He suddenly remembered that he may have left his house unlocked.
C) He suddenly remembered that he had left his house unlocked.
D) He suddenly remembered that he will have left his house unlocked.

Q.23

A) He asked us would we care to go.
B) He asked us if we would care to go.
C) He asked us we would care to go.
D) He asked us we will care to go.

Q.24

A) When this war is over, no nation will either be isolated in war or peace.
B) When this war is over, no nation will be either isolated in war or peace.
C) When this war is over, no nation will neither be isolated in war nor peace.
D) When this war is over, no nation will be isolated either in war or in peace.

Q.25

A) When the fact failed him, he questions his senses.
B) When the fact failed him, he questioned from his senses.
C) When the fact fails him, he questions his senses.
D) He will question his senses, when the fact will fail him.

Q.26

A) He said there has been no need to do it.
B) He said there wasn't no need to do it.
C) He said there had been not any need doing it.
D) He said there was no need to do it.

Q.27

A) I could barely make of the traffic sings through the rain.
B) I could barely make out the traffic signs because of the rain.
C) I could barely make up the traffic sings through the rain.
D) I could barely make with the traffic signs through the rain.

Q.28

A) He walked as though he is lame.
B) He walked as though he was lame.
C) He walked as though he were lame.
D) He walked as though he may have been lame.

Q.29

A) E-mail is a relatively new means of communication.
B) E-mail is a relatively new mean of communication.
C) E-mail is a relatively new mean to communication.
D) E-mail is a relatively new means to communication.

Q.30

A) The remain of the body was thrown into the sea.
B) The remains of the body were thrown into the sea.
C) The remains of the body were thrown to the sea.
D) The remains of the body was thrown into the sea.

2011

Q.31

A) The government should accrue taxes for strengthen the economy of the country.
B) The government should accrue taxes in strengthen the economy of the country.
C) The government should accrue taxes to strengthen the economy of the country.
D) The government should accrue taxes by strengthen the economy of the country.

Q.32

A) Foreign trade have assumed greater importance in recent years.
B) Foreign trade is assumed greater importance in recent years.
C) Foreign trade has assumed greater importance in recent years.
D) Foreign trade shall assumed greater importance in recent years.

Q.33

A) The space programme has been battered in bureaucratic wrangling.
B) The space programme has been battered into bureaucratic wrangling.
C) The space programme has been battered by bureaucratic wrangling.
D) The space programme has been battered to bureaucratic wrangling.

Q.34

A) He will has to deal with the problem by showing adroitness.
B) He will have to deal with the problem by showing adroitness.
C) He will had to deal with the problem by showing adroitness.
D) He will having to deal with the problem by showing adroitness.

Q.35

A) He does possesses altruistic behavior.
B) He does possess altruistic behavior.
C) He does possessing altruistic behavior.
D) He does possessed altruistic behavior.

Q.36

A) He has great affinity in nature.
B) He has great affinity with nature.
C) He has great affinity by nature.
D) He has great affinity at nature.

Q.37

A) He stands on arms akimbo.
B) He stands to arms akimbo.
C) He stands with arms akimbo.
D) He stands through arms akimbo.

Q.38

A) An amorphous mass of cells are difficult to understand.
B) An amorphous mass of cells were difficult to understand.
C) An amorphous mass of cells had difficult to understand.
D) An amorphous mass of cells is difficult to understand.

Q.39

A) He is suffering to anaphylactic shock.
B) He is suffering in anaphylactic shock.
C) He is suffering from anaphylactic shock.
D) He is suffering into anaphylactic shock.

Q.40

A) If you had asked him, he would had accepted the offer with alacrity.
B) If you had asked him, he would have being accepted the offer with alacrity.
C) If you had asked him, he would have accepted the offer with alacrity.
D) If you had asked him, he would been accepted the offer with alacrity.

2012

Q.41

A) Why does not Nomana remained true to her husband?
B) Why did not Nomana remain true to her husband?
C) Why had not Nomana remain true to her husband?
D) Why did not Nomana remained true to her husband?

Q.42

A) All my childhood, I longed desperately in for a tricycle.
B) All my childhood, I longed desperately to a tricycle.
C) All my childhood, I longed desperately for a tricycle.
D) All my childhood, I longed desperately at a tricycle.

Q.43

A) She felt unreal to the voice informed her of the subway accident.
B) She felt unreal as the voice informed her of the subway accident.
C) She felt unreal that the voice informed her of the subway accident.
D) She felt unreal for the voice informed her of the subway accident.

Q.44

A) Bill Gates is one of the wealthiest person in the world.
B) Bill Gates is one of the wealthy person in the world.
C) Bill Gates is one of the wealthiest persons in the world.
D) Bill Gates is one of the more wealthy person in the world.

Q.45

A) Her father is a SP in the Punjab Police.
B) Her father was a SP in the Punjab Police.
C) Her father is an SP in the Punjab Police.
D) Her father are a SP in the Punjab Police.

Q.46

A) There were musical instruments in the shop.
B) There was musical instruments in the shop.
C) There has musical instruments in the shop.
D) There is musical instruments in the shop.

Q.47

A) He died for heart attack in 1982.
B) He died with heart attack in 1982.
C) He died in heart attack in 1982.
D) He died of heart attack in 1982.

Q.48

A) Always speak in the truth.
B) Always tell for the truth.
C) Always tell the truth.
D) Always telling truth.

Q.49

A) Hand up the answer sheet to me.
B) Hand over the answer sheet to me.
C) Hand down the answer sheet to me.
D) Hand for the answer sheet to me.

Q.50

A) Are you noticed the peach blossoms?
B) Have you noticed the peach blossoms?
C) Will you noticed the peach blossoms?
D) Were you noticed the peach blossoms?

2013

Q.51

A) We should pay maximum accolade for our national heroes.
B) We should pay maximum accolade in our national heroes.
C) We should pay maximum accolade to our national heroes.
D) We should pay maximum accolade from our national heroes.

Q.52

A) Does any bodys knows why the latitudes close to the equator are called the horse latitudes?
B) Do any body knows why the latitudes close to the equator are called the horse latitudes?
C) Does any body knows why the latitudes close to the equator are called the horse latitudes?
D) Does any body know why the latitudes close to the equator are called the horse latitudes?

Q.53

A) Shelley is consider to be an idealist poet.
B) Shelley is considering to be an idealist poet.
C) Shelley is considers to be an idealist poet.
D) Shelley is considered to be an idealist poet.

Q.54

A) Pakistan cricket team forged an impregnable lead.
B) Pakistan cricket team forged the impregnable lead.
C) Pakistan cricket team forged against impregnable lead.
D) Pakistan cricket team forged on impregnable lead.

Q.55

A) A person which job involves calculating insurance risks and payments for insurance companies by studying how frequently fires, accidents, death etc. happen is called an actuary.
B) A person who job involves calculating insurance risks and payments for insurance companies by studying how frequently fires, accidents, death etc. happen is called an actuary.
C) A person whose job involves calculating insurance risks and payments for insurance companies by studying how frequently fires, accidents, death etc. happen is called an actuary.
D) A person whose job involves calculating insurance risks and payments for insurance companies by studying how frequently fires, accidents, death etc. happen are called an actuary.

Q.56

A) His addled brain refuse to think clearly and solve the problem.
B) His addle brain refused to think clearly and solve the problem.
C) His addle brain refuse to think clearly and solve the problem.
D) His addled brain refused to think clearly and solve the problem.

Q.57

A) The children had bloomed while their stay on the farm.
B) The children had bloomed during their stay on the farm.
C) The children had bloomed on their stay on the farm.
D) The children was bloomed while their stay on the farm.

Q.58

A) I should had business acumen.
B) I should have business acumen.
C) I should has business acumen.
D) I should may have been business acumen.

Q.59

A) No one is casting aspersions to you.
B) No one is casting aspersions at you.
C) No one is casting aspersions on you.
D) No one is casting aspersions with you.

Q.60

A) This is one of the bifurcated road.
B) This is one of the bifurcated roads.
C) This is one of them bifurcated road.
D) This is one off the bifurcated road.

2014

Q.61

A) I thought it over very carefully before broaching the subject to Asma.
B) I thought it on very carefully before broaching the subject to Asma.
C) I thought it by very carefully before broaching the subject to Asma.
D) I thought it upon very carefully before broaching the subject to Asma.

Q.62

A) He left into a blaze of anger.
B) He left with a blaze of anger.
C) He left in a blaze of anger.
D) He left back in a blaze of anger.

Q.63

A) Shahid battered Anwar down submission.
B) Shahid battered Anwar into submission.
C) Shahid down battered Anwar into submission.
D) Shahid was battered Anwar down submission.

Q.64

A) Pride was an intrinsic component of his personal makeup.
B) Pride was a intrinsic component of his personal makeup.
C) Pride an intrinsic component of his personal makeup.
D) Pride were an intrinsic component of his personal makeup.

Q.65

A) The government introduced tax laws which gave incentives to factory workers to reduce pollution.
B) The government introduced tax laws who gave incentives to factory workers to reduce pollution.
C) The government introduced tax laws which have incentives to factory workers to reduce pollution.
D) The government introduced tax laws which has incentives to factory workers to reduce pollution.

Q.66

A) It was cold and foggy, and he dared not to going out.
B) It was cold and foggy, and he dared not for going out.
C) It was cold and foggy, and he dared not go out.
D) It was cold and foggy, and he dared not gone out.

Q.67

A) There was much cheering and singing and a bread fighting across the dining hall.
B) There was much cheering and singing and a bread fight across the dining hall.
C) There was more cheer and singing and a bread fighting across the dining hall.
D) There was much cheer and singing and a bread fighting across the dining hall.

Q.68

A) Both parents of Jameel were then long died.
B) Both parents of Jameel were then long dead.
C) Both parents of Jameel were by then long dead.
D) Both parents of Jameel were by then long died.

Q.69

A) But the men ate their supper with good appetites.
B) But the men ate their supper in good appetites.
C) But the men ate their supper for good appetites.
D) But the men ate their supper into good appetites.

Q.70

A) The boy was afraid of going to jail.
B) The boy was afraid off going to jail.
C) The boy was afraid on going to jail.
D) The boy was afraid by going to jail.

2015

Q.71

A) Tourism is burgeoned over the last fifteen years.
B) Tourism will burgeoned over the last fifteen years.
C) Tourism have burgeoned over the last fifteen years.
D) Tourism has burgeoned over the last fifteen years.

Q.72

A) His remains were interred in the new cemetery.
B) His remains were entered in the new cemetery.
C) His remains was interred in the new cemetery.
D) His remains was entered in the new cemetery.

Q.73

A) They had died in the same day.
B) They had died over the same day.
C) They had died on the same day.
D) They had died of the same day.

Q.74

A) She had turned on the supper steaks when the telephone rang.
B) She had turned over the supper steaks when the telephone rang.
C) She had turned into the supper steaks when the telephone rang.
D) She had turned in the supper steaks when the telephone rang.

Q.75

A) Empty of concord is the soul of wit.
B) Empty of concord is the role of wit.
C) Empty of concord is the sole of wit.
D) Empty of concord is the howl of wit.

Q.76

A) The cheery trees stand over the woodland ride.
B) The cheery trees stand about the woodland ride.
C) The cheery trees stand beside the woodland ride.
D) The cheery trees stand on the woodland ride.

Q.77

A) He made me to write the sum on the slip and to sign my name in a book.
B) He made me write the sum on/at the slip and to sign my name in a book.
C) He made me to write the sum on the slip and sign my name in a book.
D) He made me to write the sum in a slip and to sign my name in a book.

Q.78

A) I am looking forward to secure excellent marks in MCAT.
B) I am looking forward to securing excellent marks in MCAT.
C) I am looking forward securing excellent marks in MCAT.
D) I am looking forward secure excellent marks in MCAT.

Q.79

A) The study of population growth indicates one of the greatest paradox of our time.
B) The study of population growth indicate one of the greatest paradox of our time.
C) The study of population growth indicates one of the greatest paradoxes of our time.
D) The study of population growth indicates one of the greatest paradox in our time.

Q.80

A) In North Africa, he barely escaped assassination at the hand of the governor of the province.
B) In North Africa, he barely escaped from assassination at the hands of the governor of the province.
C) In North Africa, he barely escaped from assassination at the hand of the governor of the province.
D) In North Africa, he barely escaped assassination at the hands of the governor of the province.

2016

Q.81

A) Inside a carton was a push-button unit fastened with a small wooden box.
B) Inside a carton was a push-button unit fastened by a small wooden box.
C) Inside a carton was a push-button unit fastened to a small wooden box.
D) Inside a carton was a push-button unit fastened along a small wooden box.

Q.82

A) They both looked to one another, startled by all they had just finished saying.
B) They both looked to each another, startled by all they had just finish saying.
C) They both looked to each another, startle by all they had just finish saying.
D) They both looked to each another, startled by all they had just finished saying.

Q.83

A) The lovely sentiments we go through repeating!
B) The lovely sentiments we go about repeating!
C) The lovely sentiments we go in repeating!
D) The lovely sentiments we go for repeating!

Q.84

A) With the bright light, still in her eyes, she moved quick out of the door.
B) With the bright light, still in her eyes, she moved quick out to the door.
C) With the bright light, still in her eyes, she moved quickly out to the door.
D) With the bright light, still in her eyes, she moved quickly out of the door.

Q.85

A) In a short while quiet a large crowd had been collected.
B) In a short while quite a large crowd had collected.
C) In a short while quite large crowd had collected.
D) In a short while quite the large crowd had been collecting.

Q.86

A) She watched all the important matches in the Brookfield ground.
B) She watched all the important matches on the Brookfield ground.
C) She watched all the important matches from the Brookfield ground.
D) She watched all the important matches within the Brookfield ground.

Q.87

A) Something had happened, something whose ultimate significance had yet to be reckon.
B) Something had happened, something whose ultimate significance had yet was reckon.
C) Something had happened, something whose ultimate significance had yet to be reckoned.
D) Something had happened, something whose ultimate significance had yet reckoned.

Q.88

A) His faculties were all unimpairment, and he had no personal worries of any kind.
B) His faculties were all unimparing, and he had no personal worries of any kind.
C) His faculties were all unimpaired, and he had no personal worry of any kind.
D) His faculties were all unimpaired, and he had no personal worries of any kind.

Q.89

A) It was hard to him to speak out loud, but he managed to murmur something.
B) It was hard on him to speak out loud, but he managed to murmur something.
C) It was hard for him to speak out loud, but he managed to murmur something.
D) It was hard upon him to speak out loud, but he managed to murmur something.

Q.90

A) There was a little money saved up beside.
B) There was little money saved in besides.
C) There was little money saved up beside.
D) There was a little money saved up besides.

ANSWERS

Q.1	D	**Q.24**	D	**Q.47**	D	**Q.70**	A
Q.2	D	**Q.25**	C	**Q.48**	C	**Q.71**	D
Q.3	D	**Q.26**	D	**Q.49**	B	**Q.72**	A
Q.4	B	**Q.27**	B	**Q.50**	B	**Q.73**	C
Q.5	A	**Q.28**	B	**Q.51**	C	**Q.74**	B
Q.6	B	**Q.29**	A	**Q.52**	D	**Q.75**	A
Q.7	D	**Q.30**	B	**Q.53**	D	**Q.76**	B
Q.8	B	**Q.31**	C	**Q.54**	D	**Q.77**	C
Q.9	A	**Q.32**	C	**Q.55**	C	**Q.78**	B
Q.10	C	**Q.33**	C	**Q.56**	D	**Q.79**	C
Q.11	C	**Q.34**	B	**Q.57**	B	**Q.80**	B
Q.12	A	**Q.35**	B	**Q.58**	B	**Q.81**	C
Q.13	A	**Q.36**	B	**Q.59**	C	**Q.82**	D
Q.14	D	**Q.37**	C	**Q.60**	B	**Q.83**	B
Q.15	D	**Q.38**	D	**Q.61**	A	**Q.84**	D
Q.16	D	**Q.39**	C	**Q.62**	C	**Q.85**	B
Q.17	D	**Q.40**	C	**Q.63**	B	**Q.86**	B
Q.18	D	**Q.41**	B	**Q.64**	A	**Q.87**	C
Q.19	A	**Q.42**	C	**Q.65**	A	**Q.88**	D
Q.20	C	**Q.43**	B	**Q.66**	C	**Q.89**	C
Q.21	C	**Q.44**	C	**Q.67**	B	**Q.90**	D
Q.22	C	**Q.45**	C	**Q.68**	C		
Q.23	B	**Q.46**	A	**Q.69**	A		

VOCABULARY

⇨ **In each of the following question, four alternative meanings of a word are given. You have to select the NEAREST CORRECT MEANING of the given word and fill the appropriate Circle on the MCQ Response Form.**

2008

Q.1 **VEXING**
A) Annoying.
B) Aggressive.
C) Viable.
D) Waxy.

Q.2 **VAGUE**
A) Respectful.
B) Uncertain.
C) Warlock.
D) Snow white.

Q.3 **MANGLED**
A) Dodged.
B) Grained.
C) Indisputable.
D) Damaged.

Q.4 **PRODIGIOUS**
A) Productive.
B) Enormous.
C) Prudential.
D) Waddle.

Q.5 **ASTOUNDED**
A) Shocked.
B) Discarded.
C) Assured.
D) Attracted.

Q.6 **SAGACITY**
A) Foolishness.
B) Large City.
C) Onions.
D) Wisdom.

Q.7 **GRIM**
A) Gratis.
B) Restless.
C) Severe.
D) Grater.

Q.8 **INDOLENTLY**
A) Lazily.
B) Indecently.
C) Ideally.
D) Gaily.

Q.9 **PERISH**
A) Furious.
B) Come to death.
C) Secret.
D) Frustrated.

Q.10 **DOZE**
A) Dogged.
B) Diet.
C) Sleep.
D) Medicine to be taken.

2009

Q.11 **AGHAST**
A) Critical
B) Reluctant
C) Happy
D) Horrified

Q.12 **INVIDIOUS**
A) Unbreakable
B) Interesting
C) Unpleasant
D) Fair

Q.13 **IMPROMPTU**
A) Arriving at the right time
B) Showing signs of being good
C) Done without preparation
D) Wretched

Q.14 **DISCERNMENT**
A) A system of controlling a country
B) The ability to show good judgement
C) The act of encouraging somebody
D) The ability to show no concern

Q.15 **NEOLOGISM**
A) A new word
B) Pleasant remark
C) Brief summary
D) Archaic expression

Q.16 **FURTIVE**
A) Furious
B) Familiar
C) Secretive
D) Easy

Q.17 **BOURGEOIS**
A) Belonging to the bureaucratic class
B) Belonging to the middle class
C) Belonging to the upper class
D) Belonging to the lower class

Q.18 **RUMINATE**
A) Eat greedily
B) Think deeply
C) Work lazily
D) Run fast

Q.19 **EMBELLISH**
A) Beautify
B) Nominate
C) Finish
D) Weaken

Q.20 **PARABLE**
A) Impossible
B) Sociable
C) Allegory
D) Suitable

2010

Q.21 **WALLOW**
A) Roll about
B) Mock
C) Protest
D) Borrow

Q.22 **CONNOISSEUR**
A) Guide
B) Artist
C) Expert critic of art
D) Teacher

Q.23 **ECCENTRIC**
A) Lunatic
B) Stern
C) Upset
D) Odd

Q.24 **BOULDER**
A) Rounded stone / hill
B) Builder
C) Magnanimity
D) Magnitude

Q.25 **SLUMBER**
A) Heap
B) Humble
C) Knee
D) Sleep

Q.26 **EXCREMENT**
A) Increment
B) Waste matter expelled from body
C) Excitement
D) Disagreement

Q.27 **VISAGE**
A) Vision
B) Illusion
C) Trunk less
D) A person's face

Q.28 **FELICITY**
A) Intense Happiness
B) Respite
C) Inspire
D) Sensational

Q.29 **ENMESHED**
A) Sojourn
B) Entangled
C) Gallows
D) Cascade

Q.30 **CAPTIVATE**
A) Hesitate
B) Concentrate
C) Hate
D) Fascinate

2011

Q.31 **MUSE**
A) Wander
B) Fonder
C) Robust
D) Ponder

Q.32 **FECKLESS**
A) Useless
B) Careless
C) Dauntless
D) Fearless

Q.33 **MOSAIC**
A) Pattern
B) Mortal
C) Ordinary
D) Musical

Q.34 **INSCRUTABLE**
A) Immoral
B) Unethical
C) Enigmatic
D) Unaccountable

Q.35 **JUXTAPOSE**
A) Justify
B) Compare
C) Expose
D) Jettison

Q.36 **LACERATING**
A) Landing
B) Tearing
C) Flagging
D) Lactating

Q.37 **EMPATHY**
A) Fictitious
B) Facility
C) Ability
D) Felicity

Q.38 **EVANESCENT**
A) Evident
B) Permanent
C) Event
D) transitory

Q.39 **SIDLE**
A) Sneak
B) Sift
C) Sledge
D) Sieve

Q.40 **DISSONANCE**
A) Inconsistency
B) Expansion
C) Perceptible
D) WrapPart

2012

Q.41 **DISSONANCE**
A) Inconsistency
B) Expansion
C) Perceptible
D) Warp

Q.42 **TRIFLE**
A) Pudding
B) Minor
C) Deluge
D) Treble

Q.43 **MURKY**
A) Dusty
B) Squeamy
C) Clear
D) Unclear

Q.44 **FAUX**
A) Blunder
B) Mistake
C) Indiscretion
D) False

Q.45 **MYRIAD**
A) Countable
B) Multitude
C) Measured
D) Blurred

Q.46 **FACILE**
A) Fallacy
B) Depict
C) Delicate
D) Superficial

Q.47 **MAGNUM**
A) Masterpiece
B) Magnanimity
C) Modest
D) Magnetic

Q.48 **SIDLE**
A) Sneak
B) Sift
C) Siege
D) Sieve

Q.49 **PLETHORA**
A) Plastic
B) Super-fluidity
C) Measure
D) Malleable

Q.50 **VERTEX**
A) Poetry
B) Depth
C) Zenith
D) Diminish

2013

Q.51 **HEINOUS**
A) Heroic
B) Humorous
C) Odious
D) Hone

Q.52 **ILLICIT**
A) Intimate
B) Licentious
C) Illegal
D) Limited

Q.53 **MOTIF**
A) Tough
B) Stuff
C) Motion
D) Design

Q.54 **INCULCATE**
A) Calculate
B) Instill
C) Instigate
D) Stimulate

Q.55 **INIQUITY**
A) Inequality
B) Injustice
C) Wickedness
D) Efficiency

Q.56 **INTRANSIGENT**
A) Parallel
B) Inflexible
C) Adventurous
D) Spirited

Q.57 **LAMPOON**
A) Irk
B) Gratification
C) Lacerate
D) Ridicule

Q.58 **MESMERIZE**
A) Objectify
B) Modify
C) Amalgamate
D) Fascinate

Q.59 **OBLITERATE**
A) Sanctify
B) Obscure
C) Annihilate
D) Oplate

Q.60 **MALEVOLENCE**
A) Empathy
B) Maligning
C) Hostility
D) Management

2014

Q.61 **DISDAIN**
A) Vice
B) Dislike
C) Contempt
D) Ignorance

Q.62 **SAGACITY**
A) Suspicious
B) Cruelty
C) Wisdom
D) Foolishness

Q.63 **FLAUNT**
A) Snipe
B) Dance
C) Show off
D) Preserve

Q.64 **URBANE**
A) Suave
B) Rough
C) Bad
D) Dishonest

Q.65 **DIASPORA**
A) Gathering
B) Dispersion
C) Alliance
D) Animosity

Q.66 **IMPETUOUS**
A) Honest
B) Impulsive
C) Lazy
D) Liar

Q.67 **VOCIFEROUS**
A) Hidden
B) Loud
C) Strong
D) Weak

Q.68 **TRANSIENT**
A) Permanent
B) Temporary
C) Long
D) Good

Q.69 **PROWESS**
A) Hindrance
B) Skill
C) Reservation
D) Bad name

Q.70 **BEQUEATH**
A) Grant
B) Imbibe
C) Irrigate
D) Hope

2015

Q.71 **EMPATHY**
A) Understanding
B) Animosity
C) Friendship
D) Sympathy

Q.72 **FELICITY**
A) Boredom
B) Business
C) Happiness
D) Relaxation

Q.73 **UNCANNY**
A) Exact
B) Opposite
C) Good
D) Strange

Q.74 **VIRULENT**
A) Progressive
B) Harmful
C) Healthy
D) Positive

Q.75 **RAPT**
A) Trumpet
B) Bewitched
C) Rapid
D) Rash

Q.76 **PEDAGOGY**
A) The study of pediatrics
B) The study of teaching methods
C) The study of cultural heritage
D) The study of pectoral muscle

Q.77 **INDICTMENT**
A) Humiliation
B) Offended
C) Accusation
D) Invisible

Q.78 **MITIGATION**
A) Alleviation
B) Classification
C) Formidable
D) Poisonous

Q.79 **CONCERTED**
A) Strenuous
B) Furious
C) Curious
D) Precious

Q.80 **ARCANE**
A) Mysterious
B) Furious
C) Arid
D) Clear

2016

Q.81 **STALWART**
A) Loyal
B) Lazy
C) Lacking strength
D) High

Q.82 **CHIVALRY**
A) Coward
B) Non-cooperative
C) Imitating
D) Gallant

Q.83 **RAKISH**
A) Curved
B) Traditional
C) Formal
D) Dashing

Q.84 **PRODIGIOUS**
A) Huge
B) Trivial
C) Little
D) Square

Q.85 **IMPROVISE**
A) Colophon
B) Concoct
C) Divert
D) Respite

Q.86 **PARADOX**
A) Anomaly
B) Prototype
C) Steward
D) Fashion

Q.87 **MANIFESTATION**
A) Mode
B) Token
C) Quirk
D) Bulwark

Q.88 **RECONNOITRE**
A) Patrol
B) Arcane
C) Exhort
D) Falter

Q.89 **SOJOURN**
A) Visit
B) Belch
C) Furry
D) Inking

Q.90 **MUSE**
A) Immaculate
B) Chew over
C) Sigh over
D) Vagary

ANSWERS

Q.1	A	**Q.24**	A	**Q.47**	A	**Q.70**	A
Q.2	B	**Q.25**	D	**Q.48**	A	**Q.71**	D
Q.3	D	**Q.26**	B	**Q.49**	B	**Q.72**	C
Q.4	B	**Q.27**	D	**Q.50**	C	**Q.73**	D
Q.5	A	**Q.28**	A	**Q.51**	C	**Q.74**	B
Q.6	D	**Q.29**	B	**Q.52**	B	**Q.75**	B
Q.7	C	**Q.30**	D	**Q.53**	D	**Q.76**	B
Q.8	A	**Q.31**	D	**Q.54**	B	**Q.77**	C
Q.9	B	**Q.32**	A	**Q.55**	C	**Q.78**	A
Q.10	C	**Q.33**	A	**Q.56**	B	**Q.79**	A
Q.11	D	**Q.34**	C	**Q.57**	D	**Q.80**	A
Q.12	C	**Q.35**	B	**Q.58**	D	**Q.81**	A
Q.13	C	**Q.36**	B	**Q.59**	C	**Q.82**	D
Q.14	B	**Q.37**	C	**Q.60**	C	**Q.83**	D
Q.15	A	**Q.38**	D	**Q.61**	C	**Q.84**	A
Q.16	C	**Q.39**	A	**Q.62**	C	**Q.85**	B
Q.17	B	**Q.40**	A	**Q.63**	C	**Q.86**	A
Q.18	B	**Q.41**	A	**Q.64**	A	**Q.87**	B
Q.19	A	**Q.42**	B	**Q.65**	B	**Q.88**	A
Q.20	D	**Q.43**	D	**Q.66**	B	**Q.89**	A
Q.21	A	**Q.44**	D	**Q.67**	B	**Q.90**	B
Q.22	C	**Q.45**	B	**Q.68**	B		
Q.23	D	**Q.46**	D	**Q.69**	B		

2011-2016

Medical College Aptitude Test - Biology

UHS, Lahore

Past Papers Unit Wise MCQs

Ali Raza
ARK

Table of Specification

NO.	UNIT NAME	MCQs
1.	Introduction to Biology	1
2.	Cell Biology	10
3.	Biological Molecules	
a)	Carbohydrates	2
b)	Proteins	1
c)	Lipids	1
d)	Nucleic Acids	1
e)	Enzymes	4
4.	Microbiology	
a)	Virus	1
b)	Bacteria	2
c)	Fungi	1
5.	Kingdom Animalia	5
6.	Human Physiology	
a)	Digestive System	5
b)	Gas exchange and Transportation	5
c)	Excretion and Osmoregulation	6
d)	Nervous System	4
e)	Reproduction	5
f)	Support and Movement	5
g)	Hormonal Control (Endocrine Glands)	4
h)	Immunity	5
7.	Bioenergetics	5
8.	Biotechnology	5
9.	Ecosystem	5
10.	Evolution and Genetics	5
	TOTAL:	88

Contents

1 INTRODUCTION TO BIOLOGY

2011

Q.1 **Which of the following diseases can be prevented through vaccination?**
A) AIDS and Cancer
B) Malaria and AIDS
C) Typhoid and Cancer
D) Measles and Mumps

Q.2 **Newly produced cells/individuals which are identical in each other are known as**
A) Genetically Modified
B) Transgenic Animals
C) Transgenic Bacteria
D) Clones

Q.3 **Which of the following is a blood borne disease?**
A) Hepatitis
B) Cholera
C) Influenza
D) Candidiasis

Q.4 **The control of pest has traditionally meant regulation by natural enemies, predators, parasites and pathogens. This type of control is known as**
A) Cultural Control
B) Biological Control
C) Pesticides Control
D) Insecticides Control

2012

Q.5 **Population of different species (plants and animals) living in the same habitat form a**
A) Community
B) Ecosystem
C) Biosphere
D) Microhabitat

Q.6 **The part of the body which forms a structural and functional unit and is composed of more than one tissue is called**
A) Organ
B) Organelle
C) Organ system
D) Whole organism

Q.7 **A method in which pests are destroyed by using same living organisms or natural enemies is called**
A) Pasteurization
B) Integrated disease management
C) Biological control
D) Genetic engineering

Q.8 **Chemicals produced by microorganisms which are capable of destroying the growth of microbes are called**
A) Antigen
B) Biocidal
C) Antiseptics
D) Antibiotics

2013

Q.9 **The simplest independent unit of life is known as:**
A) Bacterial colony
B) Cell
C) Chloroplast
D) DNA

Q.10 **The plants having foreign DNA incorporated into their cells are called:**
A) Clonal plants
B) Transgenic plants
C) Biotech plants
D) Tissue cultured plants

Q.11 **Pasteurization technique is widely used for preservation of:**
A) Water
B) Heat
C) Milk products
D) Vaccines

Q.12 **The production of genetically identical copies of organisms by asexual reproduction is called:**
A) Genetic engineering
B) Integrated disease management
C) Hydroponic culture technique
D) Cloning

2014

Q.13 **The use of living organisms in industry for the production of useful products is known as**
A) Parasitology
B) Biochemistry
C) Biotechnology
D) Molecular Biology

Q.14 **Plants having foreign DNA incorporated into their cells are called:**
A) Clone plants
B) Transgenic plants
C) Parthenocarpic plants
D) Mutant giants

Q.15 **Treatment by using attenuated culture of bacteria is called**
A) Chemotherapy
B) Sterilization
C) Antisepsis
D) Vaccination

Q.16 **The major cause of hepatitis B is**
A) Blood transfusion
B) Blood clotting
C) Absence of fibrinogen
D) Contaminated soil

2015

Q.17 **Which one of the following edible products is widely pasteurized?**
A) Soft drinks
B) Mango squash
C) Milk
D) Orange Juice

2016

Q.18 **_____ is the branch of Biology used for the identification and interpretation of fossils.**
A) Evolution
B) Paleontology
C) Zoogeography
D) Biodiversity

ANSWERS						
	Q.1	D	**Q.7**	C	**Q.13**	C
	Q.2	A	**Q.8**	D	**Q.14**	B
	Q.3	A	**Q.9**	B	**Q.15**	D
	Q.4	B	**Q.10**	B	**Q.16**	A
	Q.5	A	**Q.11**	C	**Q.17**	C
	Q.6	A	**Q.12**	D	**Q.18**	B

2 CELL BIOLOGY

2011

Q.1 **When chromosomes uncoil, the nucleoli are reformed and two nuclei are the two poles of the cell; stage is known as**
A) Prophase
B) Metaphase
C) Telophase
D) Anaphase

Q.2 **Mental retardation, short stature, broad face and squint eyes are the symptoms of**
A) Down's syndrome
B) Klinefelter's syndrome
C) Turner's syndrome
D) XYZ syndrome

Q.3 **Chiasmata formation takes place during the process which is known as**
A) Crossing Over
B) Attachment
C) Pairing
D) Leptotene

Q.4 **Healing of a wound and repair is the phenomenon which takes place by the process of**
A) Mitosis
B) Meiosis
C) Cell Growth
D) Mitosis & Meiosis

Q.5 **Which one of the following is the main cause of cancer?**
A) Mutation
B) Controlled Cell Division
C) Regulated Mitosis
D) Haploid Division

Q.6 **Which of the following organelles is concerned with the cell secretion**
A) Ribosomes
B) Golgi Apparatus
C) Lysosomes
D) Mitochondria

Q.7 **Which of the following contains peptidoglycan cell wall?**
A) Penicillium
B) Bacterium
C) Adiantum
D) Polytrichum

Q.8 **The inner membrane of mitochondria is folded to form finger like structure called**
A) Cristae
B) Vesicle
C) Matrix
D) Cisternae

Q.9 **Interior of chloroplast is divided into heterogeneous structure, embedded in the matrix known as**
A) Grana
B) Stroma
C) Thylakoids
D) Cisternae

Q.10 **In which phase of the cell division the metabolic activity of the nucleus is high?**
A) Mitosis
B) Interphase
C) Meiosis
D) Cell Cycle

2012

Q.11 **Plastids are only found in the**
A) Animals and Plants
B) Animals
C) Plants
D) Viruses

Q.12 **Plasma membrane is chemically composed of**
A) Phospholipids only
B) Lipids and proteins
C) Lipids and carbohydrates
D) Glycoproteins

Q.13 **Endoplasmic reticulum contains a system of flattened membrane-bounded sacs which are named as**
A) Cristae
B) Marks
C) Cisternae
D) Tubules

Q.14 **Lipids synthesis / metabolism takes place in which of the following organelle?**
A) Mitochondria
B) Vacuoles
C) Rough endoplasmic reticulum
D) Smooth endoplasmic reticulum

Q.15 **Ribosomes exist in two forms, either attached with RER or freely dispersed in the**
A) Tonoplast
B) Golgi bodies
C) Cytoplasm
D) SER

Q.16 **Exchange of segments between homologous chromosomes is called**
A) Segregation
B) Independent assortment
C) Crossing over
D) Mutation

Q.17 **If a person has 44 autosomes + XXY, he will suffer from**
A) Klinefelter's syndrome
B) Down's syndrome
C) Turner's syndrome
D) Edward's syndrome

Q.18 **The ribosomal RNA is synthesized and stored in**
A) Endoplasmic reticulum
B) Nucleolus
C) Golgi complex
D) Chromosomes

Q.19 **In which stage of Interphase, there is increase in cell size and many biochemical are formed?**
A) G_2 phase
B) G_1 phase
C) S phase
D) C phase

Q.20 **In Down's syndrome, which one of the following pair of chromosome fails to segregate?**
A) 7
B) 18
C) 21
D) 19

2013

Q.21 **The process by which unwanted structures within the cell are engulfed and digested within the lysosome is known as:**
A) Endocytosis
B) Exocytosis
C) Hydrolysis
D) Autophagy

Q.22 **The _____ model of plasma membrane suggests that proteins are embedded in lipid bilayer:**
A) Unit membrane
B) Fluid mosaic
C) Permeable
D) Ultracentrifuge

Q.23 **The function of nucleolus is to make:**
A) rDNA
B) Ribosomes
C) RNA
D) Chromosomes

Q.24 **Lipid metabolism is the function of:**
A) Mitochondria
B) Sarcoplasmic reticulum
C) RER
D) SER

Q.25 **The enzymes of lysosomes are synthesized on:**
A) RER
B) SER
C) Chloroplast
D) Golgi Apparatus

Q.26 **Centrioles are made up of _____ microtubules:**
A) 9
B) 27
C) 3
D) 12

Q.27 **Which of the following structures is absent in higher plants and found in animal cells:**
A) Centriole
B) Cytoskeleton
C) Mitochondria
D) Cytoplasm

Q.28 **The soluble part of cytoplasm or fluid that remains when all organelles are removed is known as:**
A) Solution
B) Gelatin material
C) Cytoskeleton
D) Cytosol

Q.29 **The outer membrane of the nuclear envelope is at places continuous with the:**
A) Golgi apparatus
B) Endoplasmic Reticulum
C) Lysozymes
D) Peroxisomes

Q.30 **Down's syndrome is a result of non-disjunction of_____ pair of chromosomes that fails to segregate:**
A) 21^{st}
B) 22^{nd}
C) 18^{th}
D) 24^{th}

2014

Q.31 **During animal cell division, the spindle fibres are formed from**
A) Mitochondria
B) Centrioles
C) Ribosomes
D) Lysosomes

Q.32 **Which component of the cell is concerned with cell secretions?**
A) Plasma membrane
B) Golgi complex
C) Cytoskeleton
D) Mitochondria

Q.33 **During which period of interphase (cell cycle) DNA is synthesized?**
A) G_1
B) G_2
C) S
D) G_0

Q.34 **Peptidoglycan or murein is a special or distinctive feature of cell wall in**
A) Algae
B) Fungi
C) Bacteria
D) Plants

Q.35 **In mitochondria, small knob-like structures called F1 particles are found in:**
A) Outer membrane
B) Outer compartment
C) Inner membrane
D) Inner compartment

Q.36 **The most critical phase of mitosis which ensures equal distribution of chromatids in the daughter cells is**
A) Prophase
B) Metaphase
C) Anaphase
D) Telophase

Q.37 **Non-disjunction of 21^{st} pair of chromosomes in one of the gamete leads to 47 chromosomes in one individual. This condition is called**
A) Turner's syndrome
B) Klinefelter's syndrome
C) Down's syndrome
D) Jacob's syndrome

Q.38 **The intake of liquid materials across the cell membrane is**
A) Phagocytosis
B) Endocytosis
C) Pinocytosis
D) Exocytosis

Q.39 **Which one of the following is the site of oxidative phosphorylation in mitochondria?**
A) Cristae
B) Matrix
C) Outer membrane
D) Ribosomes

Q.40 **Organelle involved in the synthesis of ATP is**
A) Ribosome
B) Mitochondria
C) Nucleus
D) Centriole

2015

Q.41 **During maternal mitosis, non-disjunction of autosomal chromosome pair results in the formation of an egg having 24 chromosomes in:**
A) Klinefelter's Syndrome
B) Down's Syndrome
C) Turner's Syndrome
D) Jacob's Syndrome

Q.42 **Typical symptoms like enlarged breasts and small testis in male are attributed to:**
A) Down's Syndrome
B) Turner's Syndrome
C) Klinefelter's Syndrome
D) Phenylketonuria

Q.43 **Fluid mosaic model of plasma membrane states that protein molecules float in a fluid _____ layer.**
A) Galactose
B) Phospholipids
C) Glucose
D) Carbohydrate

Q.44 **How many triplets of microtubules are present in centriole?**
A) Ten
B) Eight
C) Nine
D) Seven

Q.45 **Turner's syndrome is characterized by having:**
A) Trisomy 21
B) 44 + XXY
C) Trisomy 18
D) 44 + XO

Q.46 **Which one of the following cell structure is involved in the synthesis of lipids?**
A) Endoplasmic Reticulum
B) Golgi Complex
C) Centriole
D) Mitochondria

Q.47 **Ribosomes are tiny organisms, which are involved in the synthesis of:**
A) Protein
B) RNA
C) Nucleus
D) Nuclosome

Q.48 **Which organelle is bounded by two membranes?**
A) Ribosome
B) Mitochondria
C) Lysosome
D) Nucleolus

Q.49 **At the beginning of nuclear division, the number of microtubule triplets in two pairs of centrioles that migrate to opposite poles are:**
A) 9
B) 18
C) 108
D) 36

Q.50 **The disease in which an individual has extra sex chromosome (44 + XXY) is known as:**
A) Down's syndrome
B) Tuner's syndrome
C) Klinefelter's syndrome
D) Jacob's syndrome

2016

Q.51 **The rapid exchange of materials through carrier proteins across the plasma membrane is called:**
A) Passive Diffusion
B) Active Transport
C) Endocytosis
D) Facilitated Diffusion

Q.52 **The inner membrane of mitochondria form extensive infoldings called:**
A) Cristae
B) Cisternae
C) Lamella
D) Bifidae

Q.53 **Which one of the following organelle is found in both prokaryotic and eukaryotic cells?**
A) Centriole
B) Endoplasmic Reticulum
C) Nucleus
D) Ribosome

Q.54 **Out of the given options, choose the one which shows the structures found only in plants**
A) Vacuole, Chloroplast, Ribosomes
B) Chloroplast, Microtubules, Peroxisomes
C) Chloroplast, Cell Wall, Vacuole
D) Chloroplast, Cell Wall, Mitochondria

Q.55 **Presence of large central vacuole is the characteristic of:**
A) Prokaryotes
B) Protists
C) Fungi
D) Plants

Q.56 **The basic structure of plasma membrane is provided by:**
A) Proteins
B) Cholesterols
C) Cytoskeleton
D) Phospholipids

Q.57 **The organelle involved in detoxification of drugs and poisons in the liver cells is:**
A) Smooth Endoplasmic Reticulum
B) Rough Endoplasmic Reticulum
C) Golgi Apparatus
D) Lysosomes

Q.58 **Down's syndrome is characterized by _____ at chromosome 21.**
A) Trisomy
B) Monosomy
C) Polysomy
D) Disomy

Q.59 **Which of the following is an example of autosomal non-disjunction?**
A) Turner's Syndrome
B) Jacob's Syndrome
C) Metastasis
D) Down's syndrome

Q.60 **Infertility, short height, webbed neck and low hairline at lack are symptoms of _____ syndrome.**
A) Turner's
B) Down's
C) Edward's
D) Patau's

ANSWERS

Q.1	C	**Q.16**	C	**Q.31**	B	**Q.46**	B
Q.2	A	**Q.17**	A	**Q.32**	B	**Q.47**	A
Q.3	A	**Q.18**	B	**Q.33**	C	**Q.48**	B
Q.4	A	**Q.19**	B	**Q.34**	C	**Q.49**	D
Q.5	A	**Q.20**	C	**Q.35**	C	**Q.50**	C
Q.6	B	**Q.21**	D	**Q.36**	C	**Q.51**	D
Q.7	B	**Q.22**	B	**Q.37**	C	**Q.52**	A
Q.8	A	**Q.23**	B	**Q.38**	C	**Q.53**	D
Q.9	A	**Q.24**	D	**Q.39**	A	**Q.54**	C
Q.10	B	**Q.25**	A	**Q.40**	B	**Q.55**	D
Q.11	C	**Q.26**	B	**Q.41**	B	**Q.56**	D
Q.12	B	**Q.27**	A	**Q.42**	C	**Q.57**	A
Q.13	C	**Q.28**	D	**Q.43**	B	**Q.58**	A
Q.14	D	**Q.29**	A	**Q.44**	C	**Q.59**	D
Q.15	C	**Q.30**	A	**Q.45**	D	**Q.60**	A

3 BIOLOGICAL MOLECULES

2011

Q.1 **The covalent bond formed between two monosaccharides is called**
A) Glycosidic Bond
B) Hydrogen Bond
C) Peptide Bond
D) Disulphide

Q.2 **The bond formed between glucose and fructose form sucrose is**
A) 1,4 Glycosidic Linkage
B) 1,2 Glycosidic Linkage
C) 1,6 Glycosidic Linkage
D) 1,3 Glycosidic Linkage

Q.3 **In an amino acid in which the R-group is H, its name will be**
A) Alanine
B) Glycine
C) Leucine
D) Valine

Q.4 **Fatty acid are the organic compounds containing hydrogen, oxygen and one of the following are**
A) –COOH
B) $-NH_2$
C) Acyl
D) Sucrose

Q.5 **The combination of a pentose sugar with a base result in a compound is known as**
A) Nucleotide
B) Nucleoside
C) Nucleic Acid
D) Polynucleotide

Q.6 **An enzyme and substrate reacts through a special feature or site present in enzyme:**
A) Building Site
B) Active Site
C) Catalyst Site
D) Inhibition Site

Q.7 **The non-protein part of enzyme which is covalently and permanently bonded is called**
A) Prosthetic Group
B) Co-Factor
C) Co-Enzyme
D) Activator

Q.8 **One of the pyrimidine bases is absent in DNA**
A) Uracil
B) Thymine
C) Cytosine
D) Adenine

Q.9 **Enzymes increase the rate of reaction by**
A) Increasing Temperature
B) Decreasing pH
C) Decreasing Activation Energy
D) Increasing Activation Energy

2012

Q.10 **Carbohydrates are organic molecules and contain three elements**
A) Carbon, water and oxygen
B) Carbon, Sulphur and hydrogen
C) Carbon, calcium and hydrogen
D) Carbon, hydrogen and oxygen

Q.11 **Which one are intermediates in respiration and photosynthesis both?**
A) Ribose and heptolose
B) Glyceraldehydes and dihydroxyacetone
C) Glucose and galactose
D) Fructose and ribulose

Q.12 **Which of the following is a peptide bond?**
A) –C–N
B) –C–O
C) –C–P
D) –C–S

Q.13 **Which of the following is an unsaturated fatty acid?**
A) Acetic Acid
B) Butyric acid
C) Oleic acid
D) Palmitic acid

Q.14 **Which of the following combination of base pair is absent in DNA?**
A) A–T
B) C–G
C) A–U
D) T–A

Q.15 **The type of inhibition in which inhibitor has no structural similarity to substrate and combines with enzyme at other than the active site is called**
A) Irreversible inhibition
B) Competitive inhibition
C) Non-competitive and reversible inhibition
D) Reversible inhibition

Q.16 **The inhibitors that bind tightly and permanently to enzymes and destroy their globular structure and catalytic activity are**
A) Reversible inhibitors
B) Irreversible inhibitors
C) Competitive inhibitors
D) Non-competitive inhibitors

Q.17 **Enzyme succinate dehydrogenase converts succinate into**
A) Malate
B) Malonic acid
C) Citrate
D) Fumarate

Q.18 **If the detachable co-factor is an inorganic ion then it is designated as**
A) Coenzyme
B) Prosthetic group
C) Holoenzyme
D) Activator

2013

Q.19 **_____ is most abundant carbohydrate in nature.**
A) Waxes
B) Glycerol
C) Starch
D) Cellulose

Q.20 **Which of the following is a keto sugar:**
A) Glyceraldehyde
B) Dihydroxy-acetone
C) Ribose
D) Glucose

Q.21 **Amino acid in which the R-group is hydrogen is:**
A) Glycine
B) Alanine
C) Leucine
D) Valine

Q.22 **Acyl-glycerols like fats and oils are esters formed by condensation reaction between:**
A) Fatty acids and water
B) Fatty acids and alcohols
C) Fatty acids and glucose
D) Fatty acids and phosphates

Q.23 **Which of the following is purine:**
A) Guanine
B) Cytosine
C) Thymine
D) Uracil

Q.24 **If the co-factor is covalently or tightly and permanently bonded to enzyme then it will be called:**
A) Coenzyme
B) Prosthetic group
C) Activator
D) Apoenzyme

Q.25 **Optimum pH value for the working of pancreatic lipase is:**
A) 4.50
B) 7.60
C) 2.00
D) 9.00

Q.26 **The view that active site of an enzyme is flexible and when a substrate combines with it, cause changes in enzyme structure is known as:**

A) Lock & key model
B) Induce fit model
C) Sliding filament model
D) Specificity model

Q.27 **All coenzymes are derived from:**

A) Proteins
B) Nucleic acids
C) Carbohydrate
D) Vitamins

2014

Q.28 **The most common respiratory substrate as a source of energy is**

A) Glucose
B) Sucrose
C) Fructose
D) Insulin

Q.29 **The simplest monosaccharide containing keto group is**

A) Glyceraldehyde
B) Dihydroxy acetone
C) Glucose
D) Ribose

Q.30 **If the genetic code is made up of three nucleotides, then total possible genetic codes will be**

A) 4
B) 20
C) 64
D) 61

Q.31 **Waterproof surfaces like cuticle of leaf and protective covering of an insect's body are**

A) Phospholipids
B) Waxes
C) Terpenoids
D) Acyl glycerols

Q.32 **In translation the terminating codon is**

A) GUA
B) UAA
C) UUG
D) AGU

Q.33 **All co-enzymes are derived from**

A) Proteins
B) Carbohydrates
C) Metal ions
D) Vitamins

Q.34 **The competitive inhibitors have structural similarity with**

A) Active site
B) Binding site
C) Substrate
D) Co-enzyme

Q.35 **Which one of the following is the optimum pH of pancreatic lipase enzyme?**

A) 7.60
B) 8.00
C) 9.00
D) 9.70

Q.36 **A co-factor tightly bound to the enzyme on the permanent basis is called**

A) Activator
B) Co-enzyme
C) Prosthetic group
D) Apo-enzyme

2015

Q.37 **Monosaccharides are major components of:**

A) DNA, ATP, Ribulose bisphosphate and Cysteine
B) DNA, NAD and Insulin
C) DNA, NADP, ATP and Ribulose bisphosphate
D) DNA, RNA and Myosin

Q.38 **Blood group antigen contains:**

A) Glycoproteins
B) Phospholipids
C) Glycolipids
D) Sphingolipids

Q.39 **Myosin is a _____ type of protein.**
A) Intermediate
B) Simple
C) Globular
D) Fibrous

Q.40 **Which one of the following is an example of unsaturated fatty acid?**
A) Butyric Acid
B) Oleic Acid
C) Palmitic Acid
D) Acetic Acid

Q.41 **Number of base pairs in one turn of DNA is:**
A) 10
B) 2
C) 34
D) 54

Q.42 **Which molecular structure of enzyme is essential for activity of enzyme?**
A) Primary Structure
B) Quaternary Structure
C) Secondary Structure
D) Tertiary Structure

Q.43 **Some enzymes require helper which is non-protein part for its efficient functioning that is called:**
A) Accelerator
B) Cofactor
C) Prosthetic group
D) Apoenzyme

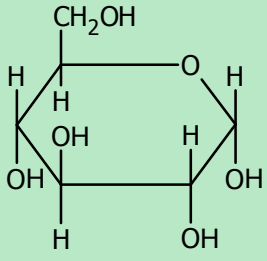
Q.44 **Pepsin, protein digesting enzymes, sets best pH:**
A) 3.00
B) 4.50
C) 2.00
D) 6.00

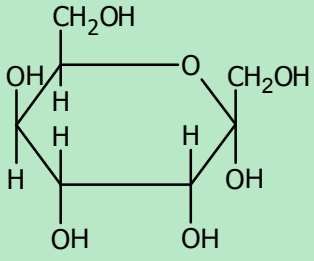
Q.45 **Which one of the following is an example of competitive inhibitor?**
A) Glucose
B) Fumerate
C) Succinic Acid
D) Melonate

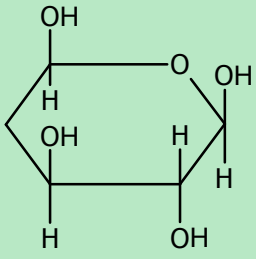
2016

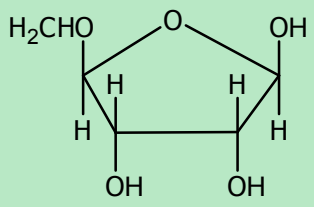
Q.46 **The compounds which on hydrolysis yield polyhydroxy aldehyde or ketone subunits are:**
A) Lipids
B) Proteins
C) Polynucleotides
D) Carbohydrates

Q.47 **Which one of the following is the formula structure of D (α) glucose?**

A)


C)


B)


D)


Q.48 **Secondary structure of protein is found in:**
A) Trypsin
B) Keratin
C) Insulin
D) Glucagon

Q.49 **Waxes are formed by combination of fatty acids with:**

A) Alcohol
B) Glycerol
C) Serine
D) Cysteine

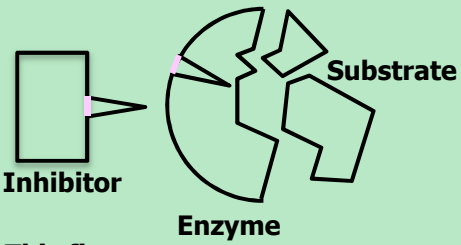
Q.50 **Phosphodiester bond is:**

A) P—O—C—P—O—C
B) C—O—P
C) C—O—P—O—C
D) C—C—O—P

Q.51 **An enzyme required Mg^{++} to catalyze the substrate. The Mg^{++} is best identified as:**

A) Prosthetic group
B) Activator
C) Co-enzyme
D) Inhibitor

Q.52



This figure represents _____ inhibitor.

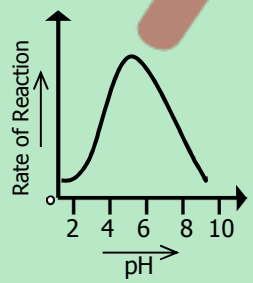
A) Non-competitive
B) Competitive
C) Irreversible
D) Isosteric

Q.53 **According to _____ model the active site of enzyme is modified as the substrate interacts with enzyme.**

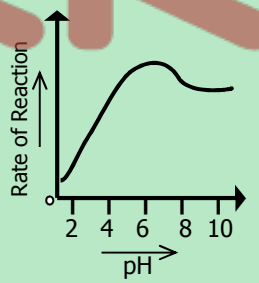
A) Induced fit
B) Lock and Key
C) Emil Fischer
D) Fluid Mosaic

Q.54 **Which one of the following graphs shows how the rate of reaction of pepsin is affected by pH?**

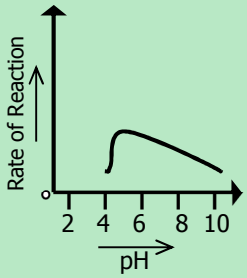
A)



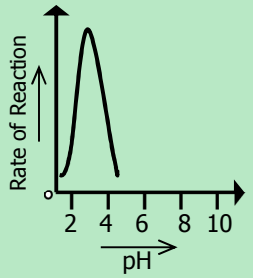
C)



B)



D)



ANSWERS

Q.1	A	**Q.16**	B	**Q.31**	B	**Q.46**	D
Q.2	B	**Q.17**	D	**Q.32**	B	**Q.47**	A
Q.3	B	**Q.18**	D	**Q.33**	D	**Q.48**	B
Q.4	A	**Q.19**	D	**Q.34**	C	**Q.49**	A
Q.5	B	**Q.20**	B	**Q.35**	C	**Q.50**	C
Q.6	B	**Q.21**	A	**Q.36**	C	**Q.51**	B
Q.7	A	**Q.22**	B	**Q.37**	C	**Q.52**	A
Q.8	A	**Q.23**	A	**Q.38**	A	**Q.53**	A
Q.9	C	**Q.24**	B	**Q.39**	D	**Q.54**	D
Q.10	D	**Q.25**	D	**Q.40**	B		
Q.11	B	**Q.26**	B	**Q.41**	A		
Q.12	A	**Q.27**	D	**Q.42**	D		
Q.13	C	**Q.28**	A	**Q.43**	B		
Q.14	C	**Q.29**	B	**Q.44**	C		
Q.15	C	**Q.30**	C	**Q.45**	D		

4 MICROBIOLOGY

2011

Q.1 **Which one of the following diseases caused by enveloped RNA virus and spread in epidemic form?**
A) Influenza
B) Herpes Simplex
C) Polio
D) Small Pox

Q.2 **The structure which contains the gene for drug resistance bacteria are**
A) Nucleoids
B) Mesosomes
C) Chromatin Bodies
D) Plasmids

Q.3 **Antibiotics that kill microbes immediately are called**
A) Microbistatic
B) Microbicidal
C) Biostatic
D) Chemotherapeutic

Q.4 **Which one of the following fungi causes vaginal thrush?**
A) Candida
B) Aspergillus
C) Tortula
D) Penicillium

2012

Q.5 **In HIV viruses, reverse transcriptase converts single-stranded RNA into double stranded viral DNA. This process is called**
A) Translation
B) Duplication
C) Replication
D) Reverse Transcriptase

Q.6 **Mesosomes are infoldings of the cell membrane and are involved in**
A) DNA replication
B) RNA synthesis
C) Protein synthesis
D) Metabolism

Q.7 **Most widespread problem of the antibiotics misuse is the**
A) Rapid cure
B) Increased resistance in pathogen
C) Disturbance of metabolism
D) Immunity

Q.8 **Which of the following component is found in the cell wall of fungi?**
A) Cellulose
B) Chitin
C) Proteins
D) Glycerol

2013

Q.9 **Reverse transcription is used to make DNA copies of:**
A) Host RNA
B) Viral RNA
C) Host DNA
D) Viral DNA

Q.10 **Antibiotics are produced by fungi and certain bacteria of group:**
A) Actinomycetes
B) Oomycetes
C) Ascomycetes
D) Basidiomycetes

Q.11 **Which statement about bacteria is true:**
A) Gram positive bacteria have more lipids in their cell wall
B) Gram negative bacteria have more lipids in their cell wall
C) Lipids are absent in cell wall of both gram positive and negative bacteria
D) Both have equal amount of lipids

Q.12 **Fungi which cause thrush in humans:**
A) Sarcomeres
B) Candidiasis
C) Lovastatin
D) Aspergillus

2014

Q.13 **Which one of the following cells are mainly infected by HIV?**
A) T-killer lymphocytes
B) T-helper lymphocytes
C) B-plasma cells
D) B-memory cells

Q.14 **Which one of the following antibiotic causes permanent discoloration of teeth in young children if it is misused?**
A) Penicillin
B) Streptomycin
C) Sulfonamide
D) Tetracycline

Q.15 **What are the sequence of steps in which a bacteriophage attacks bacteria and injects its DNA?**
A) Landing → Tall contraction → Penetration → DNA Injection
B) Penetration → Landing → Tall contraction → DNA Injection
C) Tall contraction → Landing → DNA Injection → Penetration
D) Landing → Penetration → Tall contraction → DNA Injection

Q.16 **Athlete's Foot is a disease caused by**
A) Bacteria
B) Virus
C) Fungus
D) Arthropod

2015

Q.17 **HIV is classified as:**
A) Bacteriophage
B) Oncovirus
C) Retrovirus
D) Icosahedral virus

Q.18 **Cyanobacteria are:**
A) Photoautotrophic bacteria
B) Chemosynthetic bacteria
C) Saprotrophic bacteria
D) Parasitic bacteria

Q.19 **During favourable conditions, certain bacteria produces:**
A) Ribosomes
B) Plasmids
C) Mitochondria
D) Spores

Q.20 **In rhizopus, zygote forms temporary, dormant, thick-walled resistant structure called:**
A) Zygospore
B) Spore
C) Sporangia
D) Hydra

2016

Q.21 **All viruses can reproduce within living organisms only, so they are known as:**
A) Ectoparasites
B) Endoparasites
C) Obligative Intracellular Parasites
D) Facultative Intracellular Parasites

Q.22 **Many bacteria are motile due to presence of:**
A) Flagella
B) Pilli
C) Cilia
D) Microtubules

Q.23 **_____ is an invagination of cell membrane which helps in cell division.**

A) Fimbriae
B) Nucleoid
C) Mesosome
D) Endospore

Q.24 **_____ is the yeast that grows in the mucous membrane of mouth or vagina.**

A) Candida albicans
B) Saccharomyces cerevisiae
C) Aspergillus fumigatus
D) Aspergillus flavus

ANSWERS

Q.1	A	**Q.7**	B	**Q.13**	B	**Q.19**	D
Q.2	D	**Q.8**	B	**Q.14**	D	**Q.20**	A
Q.3	B	**Q.9**	D	**Q.15**	A	**Q.21**	C
Q.4	A	**Q.10**	A	**Q.16**	C	**Q.22**	A
Q.5	D	**Q.11**	B	**Q.17**	C	**Q.23**	C
Q.6	A	**Q.12**	B	**Q.18**	A	**Q.24**	A

5 KINGDOM ANIMALIA

2011

Q.1 **Body cavity of round worms is called**

A) Pseudocoelom
B) Coelom
C) Acoelom
D) Enteron

Q.2 **Fasciola is endoparasite of**

A) Colon
B) Liver
C) Small Intestine
D) Bile Duct

Q.3 **Trypanosoma is transmitted in human beings by**

A) Plasmodium
B) Anopheles
C) House Fly
D) Tsetse Fly

Q.4 **The nervous system develops from which of the following layer during embryonic development of animals**

A) Mesoderm
B) Ectoderm
C) Endoderm
D) Mesoderm and Endoderm

Q.5 **Endosperm is formed as a result of**

A) Pollination
B) Self-Pollination
C) Double Fertilization
D) Cross Pollination

2012

Q.6 **The male reproductive parts of the flower are called**

A) Gynoecium
B) Calyx
C) Androecium
D) Corolla

Q.7 **Fasciola is the name given to**

A) Tapeworm
B) Planaria
C) Liver fluke
D) Earthworm

Q.8 **Ascaris is**

A) Diploblastic
B) Triploblastic
C) Haploid
D) Acoelomate

Q.9 **During development, in an animal, mesoderm layer gives rise to**

A) Nervous System
B) Alimentary canal lining
C) Muscular and skeletal system
D) Mouth

Q.10 **Polymorphism is characteristic feature of**

A) Porifera
B) Cnidaria
C) Annelida
D) Nematodes

2013

Q.11 **When beef which is not properly cooked is consumed by humans, they become infected by:**
A) Tape worm
B) Hook worm
C) Pin worm
D) Round worm

Q.12 **Sleeping sickness in humans is caused by:**
A) Trypanosoma
B) Plasmodium
C) Anopheles
D) Andes

Q.13 **Schistosoma is a parasite that lives in the _____ of the host.**
A) Intestine
B) Kidney
C) Liver
D) Blood

Q.14 **The cavity between body wall and alimentary canal is:**
A) Coelom
B) Mesoderm
C) Endoderm
D) Mesoglea

Q.15 **The layer which forms the lining of digestive tract and glands of digestive system is:**
A) Ectoderm
B) Mesoderm
C) Endoderm
D) Mesoglea

2014

Q.16 **Ascaris is which one of the following?**
A) Ectoparasite
B) Intestinal parasite
C) Respiratory tract parasite
D) Urinogenital tract parasite

Q.17 **Polymorphism is a feature exhibited by members of**
A) Coelenterates
B) Arthropoda
C) Porifera
D) Platyhelminthes

Q.18 **Which one of the following is the primary host of liver fluke?**
A) Man
B) Sheep
C) Snail
D) Dog

Q.19 **Which one of the following is an example of a free living carnivorous flatworm?**
A) Liver fluke
B) Dugesia
C) Tapeworm
D) Schistosoma

Q.20 **The sources of staple food for man are plants which belong to the family:**
A) Mimosaceae
B) Poaceae
C) Rosaceae
D) Fabaceae

2015

Q.21 **_____ is a triploblastic organism.**
A) Jelly Fish
B) Sea Anemone
C) Tapeworm
D) Corals

Q.22 **In arthropods, the body cavity is in the form of:**
A) Coelem
B) Haemocoel
C) Psedocoelem
D) Enteron

Q.23 **_____ is a good example of polymorphism.**
A) Hydra
B) Starfish
C) Obelia
D) Equplectella

Q.24 **Name common gut roundworm parasite of human and pigs.**

A) Aascaris lumberocoides
B) Lumbericus terresaris
C) Pheretima posthuma
D) Hirudo Medicinalis

Q.25 **_____ is also called liver fluke.**

A) Dugesia
B) Taenia
C) Fasciola
D) Coral

2016

Q.26 **Taenia is an endoparasite of human, pig and cattle which belongs to phylum.**

A) Cnidaria
B) Aschelminthes
C) Annelida
D) Platyhelminthes

Q.27 **Body of _____ consists of segments called proglottis which contains mainly sex organs.**

A) Planaria
B) Ascaris
C) Fasciola
D) Tapeworm

Q.28 **_____ is a common parasite of the intestine of human and pig which belongs to phylum nematode.**

A) Taenia solanum
B) Schistosoma
C) Ascaris lumbriocoides
D) Fasciola hepatica

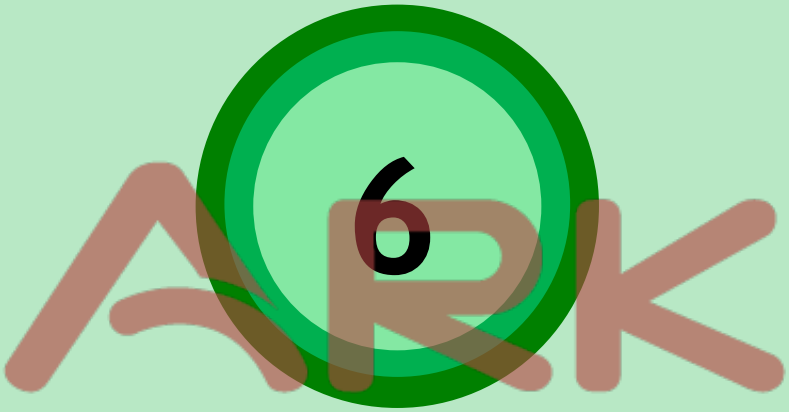
Q.29 **In radial symmetry all body parts are arranged around the central axis. Radial symmetry represents _____ mode of life.**

A) Sessile
B) Streamlined
C) Active
D) Parasitic

Q.30 **Pseudo-coelomates have a body cavity but it is not true coelom. Which one of the following is included in the group.**

A) Planaria
B) Tapeworm
C) Earthworm
D) Ascaris

ANSWERS							
Q.1	A	**Q.9**	C	**Q.17**	B	**Q.25**	C
Q.2	D	**Q.10**	B	**Q.18**	B	**Q.26**	D
Q.3	D	**Q.11**	A	**Q.19**	B	**Q.27**	D
Q.4	B	**Q.12**	A	**Q.20**	B	**Q.28**	C
Q.5	C	**Q.13**	D	**Q.21**	C	**Q.29**	A
Q.6	C	**Q.14**	A	**Q.22**	B	**Q.30**	D
Q.7	C	**Q.15**	C	**Q.23**	C		
Q.8	B	**Q.16**	B	**Q.24**	A		



HUMAN PHYSIOLOGY

6A DIGESTIVE SYSTEM

2011

Q.1 **Which of the following enzyme is released in an inactive form**

A) Amylase
B) Lipase
C) Enterokinase
D) Pepsin

Q.2 **Which of the following hormones stimulate the secretion of pancreatic juice from pancreas in liver?**

A) Secretin
B) Pepsinogen
C) Gastrin
D) Both Gastrin and Secretin

Q.3 **In large intestine, vitamin K is formed by the activity of**

A) Symbiotic Bacteria
B) Obligate Bacteria
C) Parasitic Bacteria
D) Facultative Bacteria

Q.4 **During swallowing of food which structure close nasal opening?**

A) Hard Palate
B) Soft Palate
C) Epiglottis
D) Larynx

2012

Q.5 **The muscles of the stomach walls thoroughly mix up the food with gastric juices and the resulting semi-solid / semi-liquid material is called**

A) Bolus
B) Bolus or chime
C) Mucus
D) Chyme

Q.6 **Trypsinogen is converted into trypsin by the activity of**

A) Goblet cells
B) Absorptive cells
C) Enterokinase
D) Peptidase

Q.7 **In large intestines, vitamin K is formed by the activity of**

A) Symbiotic bacteria
B) Obligate parasite
C) Parasitic bacteria
D) Facultative bacteria

Q.8 **Goblet cells secrete**

A) HCl
B) Mucus
C) Enzymes
D) Amylase

2013

Q.9 **Which one of the following vitamins is produced by microflora of large intestine?**

A) Vitamin K
B) Vitamin C
C) Vitamin A
D) Vitamin D

Q.10 **_____ is activated to _____ by Enterokinase/enteropeptidase enzyme secreted by the lining of duodenum:**

A) Pepsinogen, Pepsin
B) Pepsinogen, Trypsin
C) Trypsinogen, Trypsin
D) Chymotrypsinogen, Chymotrypsin

Q.11 **Which of the following are absorbed in the large intestine?**
A) Water and salts
B) Water and peptones
C) Salts and glycerol
D) Amino acids and sugars

Q.12 **Saliva is basically composed of water, mucus, amylase and:**
A) Sodium bicarbonate
B) Sodium chloride
C) Sodium hydroxide
D) Hydrocarbons

2014

Q.13 **In human, Escherichia coli is involved in the formation of**
A) Calcium
B) Vitamin D
C) Vitamin A
D) Vitamin K

Q.14 **The function of Goblet cells is to secrete**
A) Gastrin
B) Hydrochloric acid
C) Pepsinogen
D) Mucus

Q.15 **Gastric glands are composed of _____ types of cells**
A) Two
B) Three
C) Four
D) Five

Q.16 **HCl in gastric juice is secreted by which one of the following cells?**
A) Chief cells
B) Oxyntic cells
C) Mucous cells
D) Kupffer cells

2015

Q.17 **The lymph vessel of villi is called:**
A) Epithelium
B) Afferent lymph vessel
C) Adrenals
D) Lacteal

Q.18 **Oxyntic cells in stomach produces:**
A) Pepsin
B) Pepsinogen
C) Gastrin
D) HCl

Q.19 **The hormone which inhibits the secretion of pancreatic juice is:**
A) Secretin
B) Gastrin
C) Thyroxine
D) Parathormone

Q.20 **Trypsinogen is activated to trypsin by:**
A) HCl
B) Enterokinase
C) Mucus
D) Gastrin

Q.21 **The emulsification of fats is the role of:**
A) Saliva
B) Pancreatic juice
C) Gastrin
D) Bile

2016

Q.22 **Digestion of _____ starts in oral cavity due to the action of enzyme present in saliva.**
A) Starch
B) Cellulose
C) Fatty Acids
D) Polypeptides

Q.23 **Food enters from stomach into small intestine through:**
A) Pyloric Sphincter
B) Cardiac Sphincter
C) Semilunar valve
D) Diaphragm

Q.24 **_____ are the part of a gastric gland which produce hydrochloric acid.**

A) Parietal Cells
B) Goblet Cells
C) Chief Cells
D) Zymogen Cells

Q.25 **Protein components of food are digested by the enzymatic secretion of:**

A) Goblet Cells
B) Parietal Cells
C) Zymogen Cells
D) Oxyntic Cells

Q.26 **Digestive System consists of different layers, the innermost is known as:**

A) Submucosa
B) Mucosa
C) Muscularis
D) Serosa

ANSWERS

Q.1	D	**Q.8**	B	**Q.15**	B	**Q.22**	A
Q.2	A	**Q.9**	A	**Q.16**	B	**Q.23**	A
Q.3	A	**Q.10**	C	**Q.17**	D	**Q.24**	A
Q.4	B	**Q.11**	A	**Q.18**	D	**Q.25**	C
Q.5	D	**Q.12**	A	**Q.19**	A	**Q.26**	B
Q.6	C	**Q.13**	D	**Q.20**	B		
Q.7	A	**Q.14**	D	**Q.21**	D		

6B GAS EXCHANGE & TRANSPORTATION

2011

Q.1 **The right atrium of the heart usually receives the**

A) Deoxygenated Blood
B) Oxygenated Blood
C) Filtered Blood
D) Non-Filtered Blood

Q.2 **The largest lymph duct called thoracic lymph duct drains into**

A) Subclavian Vein
B) Renal Vein
C) Pulmonary Vein
D) Hepatic Portal Vein

Q.3 **Which protein plays a major role in maintaining osmotic balance?**

A) Albumin
B) Globulin
C) Fibrinogen
D) Prothrombin

Q.4 **The type of agranulocytes which stays in blood for a few hours and then enters tissues and become macrophages are**

A) Lymphocytes
B) Monocyte
C) Eosinophils
D) Basophils

2012

Q.5 **Mature mammalian red blood cells do not have**

A) Nucleus
B) Red color
C) Fluids
D) Haemoglobin

Q.6 **In a normal person plasma constitutes about _____ by volume of blood**

A) 50%
B) 60%
C) 45%
D) 55%

Q.7 **Which vein has oxygenated blood?**

A) Renal vein
B) Subclavian vein
B) Pulmonary vein
D) Jugular vein

Q.8 **What is the residual volume of air which always remains inside the lungs of human?**

A) 3.5 Liters
B) 0.5 Liters
C) 5.0 Liters
D) 1.5 Liters

2013

Q.9 **The total inside capacity of lungs is _____ for man.**

A) 6.7 liters
B) 2.5 liters
C) 7 liters
D) 5 liters

Q.10 **The average life span of red blood cell is about:**

A) Four months
B) Two months
C) Five months
D) One month

Q.11 **The lymphatic vessels of the body empty the lymph into blood stream at the:**
A) Abdominal vein
B) Subclavian vein
C) Jugular vein
D) Bile duct

Q.12 **Right atrium is separated from right ventricle by:**
A) Tricuspid valve
B) Bicuspid valve
C) Semilunar valve
D) Septum

2014

Q.13 **Histamine is produced by which one of the following cells?**
A) Basophils
B) Platelets
C) Monocyte
D) Eosinophils

Q.14 **Which one of the following is the most numerous / commonest of white blood cells?**
A) Eosinophils
B) Monocytes
C) Neutrophils
D) Lymphocytes

Q.15 **The oxygenated blood from lungs to heart is transported by the**
A) Pulmonary artery
B) Coronary artery
C) Pulmonary vein
D) Hepatic artery

Q.16 **Which one of the following proteins takes part in blood clotting?**
A) Prothrombin
B) Fibrinogen
C) Immunoglobulin
D) Globulin

2015

Q.17 **Right atrium is separated from right ventricle by:**
A) Bicuspid Valve
B) Semilunar Valve
C) Tricuspid Valve
D) Interatrial Septum

Q.18 **The flaps of tricuspid valves are attached to muscular extensions of right ventricle known as:**
A) Smooth Muscles
B) Papillary Muscles
C) Intercostal Muscles
D) Skeletal Muscles

Q.19 **One complete heart beat consists of one systole and one diastole and lasts for about:**
A) 0.8 sec
B) 0.2 sec
C) 0.4 sec
D) 0.5 sec

Q.20 **The heart beat cycle starts when electric impulses are generated from;**
A) AV Node
B) SV Node
C) SA Node
D) PQ Node

Q.21 **About 70-85% CO_2 in blood is carried:**
A) As carboxylase myoglobin
B) With proteins in plasma
C) Freely as CO_2
D) As bicarbonate

2016

Q.22 **In human the closed sac which surrounds the heart is:**
A) Endocardium
B) Myocardium
C) Pericardium
D) Epicardium

Q.23 **Chordae tendinea are fibrous cords attached with:**
A) Cardiac end of stomach valve
B) Tricuspid valve of heart
C) Pyloric sphincter of stomach
D) Eyelid

Q.24 **Bicuspid valve controls the flow of blood from:**

A) Right atrium to right ventricle
B) Right ventricle to pulmonary artery
C) Left ventricle to aorta
D) Left atrium to left ventricle

Q.25 **Carboxyhaemoglobin (10-20%) is formed when CO_2 combines with:**

A) Amino group of haemoglobin
B) Iron part of haemoglobin
C) Haem portion of haemoglobin
D) Plasma proteins

Q.26 **Breathing consists of:**

A) Four phases
B) Three phases
C) One phase
D) Two phases

ANSWERS

Q.1	A	**Q.8**	D	**Q.15**	C	**Q.22**	C
Q.2	A	**Q.9**	D	**Q.16**	B	**Q.23**	B
Q.3	A	**Q.10**	A	**Q.17**	C	**Q.24**	D
Q.4	B	**Q.11**	B	**Q.18**	B	**Q.25**	A
Q.5	A	**Q.12**	A	**Q.19**	A	**Q.26**	D
Q.6	D	**Q.13**	A	**Q.20**	C		
Q.7	C	**Q.14**	D	**Q.21**	D		

6C EXCRETION AND OSMOREGULATION

2011

Q.1 **Reabsorption of water by counter current multiplier mechanism takes place at**
A) Proximal Tubule
B) Distal Tubule
C) Collecting Duct
D) Loop of Henle

Q.2 **Antiduretic hormone helps in reabsorption of water by changing permeability of**
A) Proximal Tubule
B) Distal Tubule
C) Collecting Duct
D) Loop of Henle

Q.3 **During peritoneal dialysis, dialysis fluid is introduced into which part of human body?**
A) Liver
B) Abdomen
C) Kidney
D) Pancreas

Q.4 **Aldosterone helps in conservation or active absorption of**
A) Sodium
B) Calcium
C) Potassium
D) Bicarbonate Ions

Q.5 **Maximum reabsorption takes place in which part of the nephron?**
A) Distal Tubule
B) Villi
C) Cortical Tissue
D) Proximal Tubule

2012

Q.6 **In nephron, most of the reabsorption takes place in the**
A) Distal tubule
B) Proximal tubule
C) Ascending limb
D) Descending limb

Q.7 **Detection of change and signaling for effector's response to the control system is a**
A) Negative feedback
B) Positive feedback
C) Inter-coordination
D) Feedback mechanism

Q.8 **What are three components of mechanism of homeostatic regulations?**
A) Receptors, control centre and effectors
B) Sensory, motor and associative neurons
C) CNS, PNS and diffused nervous system
D) Cerebrum, cerebellum and pons

Q.9 **Blood enters the glomerulus through**
A) Efferent arteriole
B) Afferent arteriole
C) Renal artery
D) Renal vein

Q.10 **Which portion of nephron is under the control of ADH?**
A) Bowman's capsule
B) Ascending arm
C) Distal and collecting ducts
D) Descending arm

2013

Q.11 **Site of filtration in nephron is:**
A) Glomerulus and Bowman's capsule
B) Proximal and Distal end
C) Ascending and descending arm
D) Loop of Henle

Q.12 **Antidiuretic hormone increases the reabsorption of:**
A) Amino acids
B) Salts
C) Ammonia
D) Water

Q.13 **Active uptake of_____ in the ascending limb or thick loop of Henle is promoted by the action of aldosterone:**
A) K^+
B) Cl^-
C) Ca^{++}
D) Na^+

Q.14 **The process through which the body maintains the internal environment from the fluctuations of external environment is called as:**
A) Behavior of organisms
B) Adaptation
C) Thermoregulation
D) Homeostasis

Q.15 **Active pumping out of Na^+ occurs at which part of nephron:**
A) Proximal tubule
B) Descending loop of Henle
C) Ascending loop of Henle
D) Collecting ducts

2014

Q.16 **Which one of the following is responsible for the production of concentrated urine?**
A) Juxtamedullary nephrons
B) Cortical nephrons
C) Proximal tubule
D) Distal tubule

Q.17 **Reabsorption of useful constituents normally takes place in which one of the following?**
A) Proximal tubule
B) Distal tubule
C) Bowman's capsule
D) Glomerulus

Q.18 **Which one of the following parts of excretory system in humans acts as countercurrent multiplier?**
A) Kidney
B) Cortex
C) Medulla
D) Loop of Henle

Q.19 **Anti-Diuretic Hormone (ADH) is released from**
A) Anterior pituitary lobe
B) Posterior pituitary lobe
C) Hypothalamus
D) Thalamus

Q.20 **Which one of the following is the main nitrogenous waste product in humans?**
A) Urea
B) Ammonia
C) Salts
D) Uric acid

2015

Q.21 **Those nephrons which are present along the border of the cortex and medulla are called:**
A) Juxtamedullary nephrons
B) Cortical nephrons
C) Internal nephrons
D) Outer nephrons

Q.22 **When water is in short supply, increased water retention occurs through the:**
A) Cortical nephrons
B) Proximal Convoluted Tubule
C) Juxtamedullary nephrons
D) The tissue of cortex

Q.23 **In nephrons, counter-current multiplier occurs at:**
A) Loop of Henle
B) Collecting Duct
C) Bowman's Capsule
D) Glomerulus

Q.24 **Ascending loop of Henle does not allow outflow of:**
A) Na^+ ions
B) K^+ ions
C) Cl^- ions
D) Water

Q.25 **A larger quantity of dilute urine is produced in diabetes insipidus. This disease is due to the deficiency of:**
A) Antidiuretic Hormone
B) Aldosterone
C) Thyroxine
D) Cortisol

Q.26 **Water and sodium ions are reabsorbed in:**
A) Urinary Bladder and Urethra
B) Ureter
C) Adrenal Cortex
D) Proximal Convoluted Tubule & Collecting Duct

2016

Q.27 **Bowman's capsule continues as extensively convoluted portion known as:**
A) Peritubular capillaries
B) Proximal convuluted tubules
C) Efferent arterioles
D) Afferent arterioles

Q.28 **The concentration of sodium ions in body fluids is controlled by the hormone:**
A) Renin
B) Aldosterone
C) Angiotensin
D) CPK

Q.29 **A hormone released from posterior pituitary lobe acts to be actively transport water from filtrate is collecting tubules back to kidney is shown as:**
A) Renin
B) Antidiuretic hormone
C) Angiotensin
D) Growth Factor

Q.30 **The removal metabolic waste from the blood is called:**
A) Thermoregulation
B) Osmoregulation
C) Kidney Failure
D) Excretion

Q.31 **Highly toxic nitrogenous excretory product is:**
A) CO_2
B) Uric Acid
C) Urea
D) Ammonia

Q.32 **Humans have homeostatic thermostat present in a specified portion of the brain that is:**
A) Lateral ventricle
B) Thalamus
C) Spinal Cord
D) Hypothalamus

ANSWERS

Q.1	D	**Q.9**	B	**Q.17**	A	**Q.25**	A
Q.2	C	**Q.10**	C	**Q.18**	D	**Q.26**	D
Q.3	B	**Q.11**	A	**Q.19**	B	**Q.27**	B
Q.4	A	**Q.12**	D	**Q.20**	A	**Q.28**	B
Q.5	D	**Q.13**	D	**Q.21**	A	**Q.29**	B
Q.6	B	**Q.14**	D	**Q.22**	C	**Q.30**	D
Q.7	D	**Q.15**	C	**Q.23**	A	**Q.31**	D
Q.8	A	**Q.16**	A	**Q.24**	D	**Q.32**	D

6D NERVOUS SYSTEM

2011

Q.1 **Over-activity of sympathetic nervous system causes**
A) Disturbance of Vision
B) Constipation
C) Decrease in Blood Pressure
D) Increase in Heart Rate

Q.2 **Which structures respond when they are stimulated by impulse coming through motor neuron?**
A) Receptors
B) Responses
C) Effectors
D) Transduction

Q.3 **Respiratory center is located in**
A) Cerebrum
B) Cerebellum
C) Medulla
D) Hypothalamus

Q.4 **A neurological condition characterized by involuntary tremors, diminished motor activity and rigidity is called**
A) Epilepsy
B) Parkinson's Disease
C) Alzheimer's Disease
D) Cerebullar Tumours

2012

Q.5 **The part of neuron fibre which conducts nerve impulses from the cell body is**
A) Dendron
B) Dendrites
C) Axon
D) Peripheral branch

Q.6 **The number of cranial nerves in human is**
A) 31 pairs
B) 12 pairs
C) 24 pairs
D) 62 pairs

Q.7 **The part of brain which controls breathing, heart rate and swallowing is**
A) Cerebrum
B) Cerebellum
C) Medulla
D) Hypothalamus

Q.8 **Cause of Parkinson's disease is death of brain cells that produce**
A) Dopamine
B) Acetylcholine
C) ADH hormone
D) Oxytocin

2013

Q.9 **The structures which respond when they are stimulated by impulse coming through motor neuron are:**
A) Receptors
B) Responders
C) Transducers
D) Effectors

Q.10 **Thalamus and cerebrum are the part of:**
A) Fore brain
B) Mid brain
C) Hind brain
D) Spinal cord

Q.11 **There is also EVIDENCE that high levels of _____ may contribute to the onset of Alzheimer's disease:**

A) Mg
B) Mo
C) Al
D) Ca

Q.12 **L-dopa or Levodopa is used to get some relief from??**

A) Epilepsy
B) Alzheimer's disease
C) Parkinson's disease
D) Dementia

2014

Q.13 **The right and left cerebral hemispheres are connected by a thick band of nerve fibres called:**

A) Medulla
B) Corpus callosum
C) Pons
D) Hippocampus

Q.14 **The part of the brain which guides smooth and accurate motions and maintains body position is called**

A) Cerebrum
B) Cerebellum
C) Pons
D) Medulla

Q.15 **Which one of the following is the effect of sympathetic nervous system?**

A) Constriction of bronchi
B) Decrease in heart rate
C) Promotes digestion or peristalsis
D) Dilates the pupil

Q.16 **High levels of aluminium may contribute to the onset of which one of the following?**

A) Parkinson's disease
B) Epilepsy
C) Alzheimer's disease
D) Gonorrhea

2015

Q.17 **Which disease is responsible for dementia (memory loss)?**

A) Parkinson's Disease
B) Alzheimer's Disease
C) Epilepsy
D) Grave's Disease

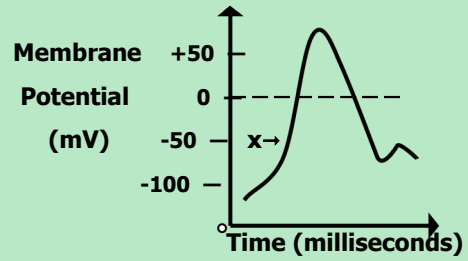
Q.18 **Neurotransmitter secreted at synapse outside the central nervous system is:**

A) Dopamine
B) Polypeptide
C) Androgen
D) Acetylcholine

Q.19 **Conduction of action potentials from one mode of Ranvier to another in myelinated neurons is through:**

A) Hyperpolarization
B) Resting Membrane Potential
C) Depolarization
D) Saltatory Conduction

Q.20 **In the following diagram of action potential in a neuron, 'x' depicts:**



A) Depolarization
B) Polarization
C) Repolarization
D) Hyperpolarization

2016

Q.21 **Random, uncontrolled activity of some cells in the brain leading to chaotic activity in both sensory and motor nerves causes patients of to see and hear different strange things.**

A) Epilepsy
B) Parkinson's Disease
C) Alzheimer's Disease
D) Huntington's Disease

Q.22 **Part of hind brain responsible for the balance and equilibrium of body is called:**

A) Medulla
B) Cerebellum
C) Pons
D) Thalamus

Q.23 **The disease in which death of small number of cells in the basal ganglia leads to inability to select and initiate patterns of movement is known as:**

A) Fever
B) Alzheimer's Disease
C) Epilepsy
D) Parkinson's Disease

Q.24 **A neurological disorder characterized by the decline in brain function is _____. Its symptoms are similar to those diseases that cause dementia.**

A) Parkinson's Disease
B) Epilepsy
C) Alzheimer's Disease
D) Diabetes

Q.25 **A discharge by brain which causes chaotic activity in motor and sensory areas is:**

A) Meningitis
B) Alzheimer's Disease
C) Epilepsy
D) Parkinson's Disease

ANSWERS

Q.1	D	**Q.8**	A	**Q.15**	D	**Q.22**	B
Q.2	C	**Q.9**	D	**Q.16**	C	**Q.23**	D
Q.3	C	**Q.10**	A	**Q.17**	B	**Q.24**	C
Q.4	B	**Q.11**	C	**Q.18**	D	**Q.25**	C
Q.5	C	**Q.12**	C	**Q.19**	D		
Q.6	B	**Q.13**	B	**Q.20**	A		
Q.7	C	**Q.14**	B	**Q.21**	A		

6E REPRODUCTION

2011

Q.1 **A type of cell in human testes which produces testosterone is called**
A) Interstitial Cells
B) Germ Cells
C) Sertoli Cells
D) Spermatocytes

Q.2 **Breakdown of endometrium during menstruation is due to**
A) Increase in Level of LH
B) Decrease in Level of Progesterone
C) Increase in Level of Progesterone
D) Increase in Level of Oestrogen

Q.3 **Oogonia are produced in the germ cells**
A) Both Uterus and Cervix
B) Cervix
C) Uterus
D) Ovary

Q.4 **Luteinizing hormone triggers**
A) Cessation of Oogenesis
B) Breakdown of Oocyte
C) Ovulation
D) Development of Zygote

Q.5 **Syphilis is a sexually transmitted disease which is caused by**
A) HIV / AIDS
B) Pseudomonas Pyogenes
C) Treponema Pallidum
D) Neisseria

2012

Q.6 **Syphilis is a sexually transmitted disease which is caused by**
A) Neisseria gonorrhoeae
B) E. coli
C) Treponema pallidum
D) Mycobacterium avium

Q.7 **Discharge of ovum or secondary oocyte from ovary or from Graafian follicle is called**
A) Fertilization
B) Pollination
C) Follicle formation
D) Ovulation

Q.8 **Second meiotic division in the secondary oocyte proceeds as far as**
A) Metaphase
B) Prophase
C) Anaphase
D) Telophase

Q.9 **Which one of the following differentiates directly into mature sperm?**
A) Primary spermatocyte
B) Secondary spermatocyte
C) Spermatogonia
D) Spermatid

Q.10 **Uterus opens into the vagina through**
A) Cervix
B) Fallopian tube
C) External genitalia
D) Vulva

2013

Q.11 **Spermatogonia differentiate directly into?**
A) Primary spermatocytes
B) Secondary spermatocytes
C) Spermatozoa
D) Spermatids

Q.12 **Treponema palladium causes?**
A) AIDS
B) Genital herpes
C) Syphilis
D) Gonorrhea

Q.13 **What is the location of interstitial cells in testes?**
A) Inside the seminiferous tubules
B) Between the seminiferous tubules
C) Among the germinal epithelial cells
D) Around the testes

Q.14 **A type of cells in human testes which produce testosterone are called?**
A) Germ cells
B) Sertoli cells
C) Interstitial cells
D) Spermatocytes

Q.15 **The hormone produced from corpus luteum is:**
A) Prolactin
B) FSH
C) Progesterone
D) LH

2014

Q.16 **Testosterone is produced by which one of the following?**
A) Sertoli cells
B) Germinal epithelium
C) Interstitial cells
D) Spermatogonia

Q.17 **The oocyte released during ovulation is in**
A) Anaphase I
B) Prophase I
C) Metaphase I
D) Metaphase II

Q.18 **Yellowish glandular structure formed after the release of egg from follicle is called**
A) Corpus callosum
B) Graafian follicle
C) Corpus luteum
D) Follicle atresia

Q.19 **On puberty, the development of primary follicles is stimulated by**
A) ICSH
B) FSH
C) LH
D) Estrogen

Q.20 **Causative agent of a sexually transmitted disease that affects mucous membrane of the urinogenital tract is**
A) Staphylococcus aureus
B) Treponema pallidum
C) Neisseria gonorrhoeae
D) Escherichia coli

2015

Q.21 **In human testis, which structure is responsible for carrying sperm from inside the testis?**
A) Seminiferous tubules
B) Urinogenital duct
C) Seminal Vesicles
D) Vasa efferentia

Q.22 **In which part of female reproductive system fertilization takes place?**
A) Proximal part of oviduct
B) Uterus
C) Placenta
D) Vagina

Q.23 **In females, FSH stimulates the ovary to produce:**
A) Progesterone
B) Lactin
C) Oestrogen
D) Oxytocin

Q.24 **Syphilis, sexually transmitted disease is caused by:**

A) HIV
B) Treponema pallidum
C) Neisseria gonorhoeae
D) Type '2' virus

Q.25 **In which phase of human female menstrual cycle, endometrium prepares for the implantation of embryo?**

A) Proliferative phase
B) Menstrual phase
C) Secretory phase
D) Ovulation phase

2016

Q.26 **Events of menustral cycle are regulated by the:**

A) Ethylene
B) Gonadotrophins
C) Auxins
D) Gibberellins

Q.27 **Decrease of FSH and increase of estrogen cause pituitary gland to secrete:**

A) Somatotropin
B) Luteinizing Hormone
C) Testosterone
D) Spermatogonium

Q.28 **Transmission of Neisseria gonorrhea is best described by which one of the following?**

A) Oro-fecal Route
B) Unsafe Sex
C) Vector Borne
D) Droplet Infection

Q.29 **Syphilis is caused by:**

A) Spirochete
B) Nostoc
C) Water blooms
D) Cyanobacteria

Q.30 **AIDS is caused by:**

A) Bacteria
B) Virus
C) Fungi
D) Alga

ANSWERS

Q.1	A	**Q.9**	D	**Q.17**	D	**Q.25**	C
Q.2	B	**Q.10**	A	**Q.18**	C	**Q.26**	B
Q.3	D	**Q.11**	A	**Q.19**	B	**Q.27**	B
Q.4	C	**Q.12**	C	**Q.20**	C	**Q.28**	A
Q.5	C	**Q.13**	B	**Q.21**	D	**Q.29**	A
Q.6	C	**Q.14**	C	**Q.22**	A	**Q.30**	B
Q.7	D	**Q.15**	C	**Q.23**	C		
Q.8	A	**Q.16**	C	**Q.24**	B		

6F SUPPORT AND MOVEMENT

2011

Q.1 **Muscle is made up of many cells which are referred to as**
A) Myofilaments
B) Myofibrils
C) Sarcolemma
D) Muscles Fiber

Q.2 **The length of myofibril from one Z-band to the next is known as**
A) Sarcomere
B) Sarcolemma
C) Sarcoplasm
D) Muscle Fiber

Q.3 **Calcium ions released during a muscle fiber contraction attach with**
A) Myosin
B) Actin
C) Tropomyosin
D) Troponin

Q.4 **A muscle condition resulting from the accumulation of lactic acid and ionic imbalance is:**
A) Tetany
B) Muscle Fatigue
C) Cramp
D) Tetanus

Q.5 **The pigment which stores oxygen in muscles is**
A) Hemoglobin
B) Myoglobin
C) Myosin
D) Actinomyosin

2012

Q.6 **Each muscle fibre is surrounded by membrane which is called**
A) Sarcomere
B) Sarcolemma
C) Twitch fibre
D) Capsule

Q.7 **When calcium ions are released from the sarcoplasmic reticulum they bind with _____ during muscle contraction**
A) Tropomyosin
B) Sarcolemma
C) Cytosol's ions
D) Troponin

Q.8 **Human and mammalian skeleton can be divided into two parts, axial skeleton and**
A) Appendicular skeleton
B) Exoskeleton
C) Endoskeleton
D) Hydrostatic skeleton

Q.9 **Last four vertebrae in humans are fused to form a structure called**
A) Sacrum
B) Cervical vertebrae
C) Pubis
D) Coccyx

Q.10 **How many bones are involved in the formation of each half of pelvic girdle?**
A) 3 bones
B) 4 bones
C) 2 bones
D) 1 bone

2013

Q.11 **The length of myofibril from one Z-band to the next is described as:**
A) Sarcolemma
B) Sarcoplasm
C) Sarcomere
D) Muscle fiber

Q.12 **The Ca^{++} ions released during a muscle fiber contraction attach with:**
A) Myosin
B) Actin
C) Troponin
D) Tropomyosin

Q.13 **The joint that allows the movement in several directions is called:**
A) Hinge joint
B) Ball and Socket joint
C) Cartilagous joint
D) Fibrous joint

Q.14 **Where can we find H zone in the figure of fine structure of skeletal muscle's myofibril?**
A) In the mid of A band
B) In I-band
C) Besides the Z-line
D) Along the I-band

Q.15 **First vertebra of cervical region of vertebral column is known as:**
A) Atlas
B) Sacral
C) Thoracic
D) Axis

2014

Q.16 **In a human vertebral column, the number of _____ vertebrae is 7.**
A) Cervical
B) Thoracic
C) Lumber
D) Sacrum

Q.17 **Which one of the following structures holds the bones together?**
A) Joints
B) Cartilages
C) Fibrous capsules
D) Ligaments

Q.18 **Which one of the following cartilages is the most abundant in the human body?**
A) Elastic cartilage
B) Chondrous cartilage
C) Fibrous Cartilage
D) Hyaline Cartilage

Q.19 **The repeated protein pattern of myofibrils is called**
A) Sarcomere
B) Zyomere
C) Sarcolemma
D) Cross bridges

Q.20 **When more energy is required in muscle contraction then that energy can also be produced by _____ as a secondary source.**
A) Glucose
B) Phosphocreatine
C) Fructose
D) Lactic acid

2015

Q.21 **The total number of cervical and thoracic vertebrate in human vertebral column is:**
A) 7
B) 19
C) 14
D) 33

Q.22 **A sarcomere is the region of a myofibril between two successive:**
A) M-lines
B) Z-lines
C) I-bands
D) T-tubules

Q.23 **The sarcolemma of muscle fibre folds inwards and forms a system of tubes which runs through the sarcoplasm called:**

A) Myofilaments
B) Sarcoplasmic reticulum
C) Z-lines
D) Transverse tubules

Q.24 **According to sliding filament theory, when muscle fibers are stimulated by nervous system, which of the following changes occurs?**

A) I-bands shorten
B) H-zone becomes more visible
C) Z-lines move further apart
D) A-bands shorten

Q.25 **If lactic acid build up in thigh muscles, it causes muscle tiredness and pain. This condition is called:**

A) Muscle Fatigue
B) Tetany
C) Cramps
D) Oxygen debt in muscles

2016

Q.26 **Brain is protected and enclosed in:**

A) Lumbar vertebrae
B) Coccyx
C) Vertebral column
D) Cranium

Q.27 **Longest bone in the human skeleton is:**

A) Ulna
B) Fibula
C) Tibia
D) Femur

Q.28 **Hips and shoulder joints are examples of:**

A) Hinge Joints
B) Ball and Socket Joints
C) Synovial Joints
D) Cartilaginous Joints

Q.29 **In pelvic region of human bosy, sacrum is formed by the fusion of:**

A) 4 Vertebrae
B) 5 Vertebrae
C) 6 Vertebrae
D) 3 Vertebrae

Q.30 **Each muscle fibre is surrounded by a modified cell membrance called:**

A) Sarcolemma
B) Sarcomere
C) Myosin Filament
D) Myofilament

ANSWERS

Q.1	D	**Q.9**	D	**Q.17**	D	**Q.25**	A
Q.2	A	**Q.10**	A	**Q.18**	D	**Q.26**	D
Q.3	D	**Q.11**	C	**Q.19**	A	**Q.27**	D
Q.4	B	**Q.12**	C	**Q.20**	B	**Q.28**	B
Q.5	B	**Q.13**	B	**Q.21**	B	**Q.29**	B
Q.6	B	**Q.14**	A	**Q.22**	B	**Q.30**	A
Q.7	D	**Q.15**	A	**Q.23**	D		
Q.8	A	**Q.16**	A	**Q.24**	A		

6G HORMONAL CONTROL

2011

Q.1 **Neurosecretory cells are present in which part of brain**
A) Hypothalamus
B) Midbrain
C) Pons
D) Cerebellum

Q.2 **Which of the following is the function of glucagon hormone?**
A) Glycogen to Glucose
B) Glucose to Glycogen
C) Glucose to Lipids
D) Glucose to Proteins

Q.3 **Addison's disease is caused due to destruction of**
A) Adrenal Cortex
B) Pituitary Adrenal Axis
C) Adrenal Medulla
D) Hypothalamus

Q.4 **Which group of hormones is made up of amino acids and their derivatives?**
A) Vasopressin and ADH
B) Epinephrine and Non-Epinephrine
C) Osterogen and Testosterone
D) Insulin and Glucagon

2012

Q.5 **Ductless glands are known as**
A) Endocrine gland
B) Exocrine gland
C) Salivary glands
D) Bile glands

Q.6 **Gastrin is the hormone which is produced by the**
A) Liver
B) Pyloric region of stomach
C) Adrenal gland
D) Mucosal lining of intestine

Q.7 **β-cells of liver secrete a hormone that is called**
A) Insulin
B) Glucagon
C) Antidiuretic hormone
D) Gastrin

Q.8 **Vasopressin and Oxytocin are released from the**
A) Placenta
B) Ovary
C) Anterior pituitary
D) Posterior pituitary

2013

Q.9 **Chemically insulin and glucagon are:**
A) Carbohydrates
B) Proteins
C) Lipids
D) Nucleic acids

Q.10 **Hormones secreted by anterior pituitary and which controls the secretion of hormones of other endocrine glands are known as:**
A) Release factor
B) Inhibitor
C) Accelerator
D) Tropic or trophic hormones

Q.11 **Alpha cells of Islets of Langerhans secrete hormone called:**
A) Glucocorticoid
B) Insulin
C) Glucagon
D) Aldosterone

Q.12 **Which of the following is the function of glucagon hormone?**
A) Glucose to lipids
B) Glucose to proteins
C) Glucose to glycogen
D) Glycogen to glucose

2014

Q.13 **Which one of the following is a steroid hormone?**
A) Glucagon
B) Thyroxine
C) Epinephrine
D) Oestrogen

Q.14 **The gonadotrophic hormones of anterior lobe of pituitary include:**
A) Prolactin, Thyroid Stimulating Hormone, Somatotropin Hormone
B) Follicle Stimulating Hormone, Luteinizing Hormone, Prolactin
C) Adrenocorticotrophic Hormone, Luteinizing Hormone, Follicle Stimulating Hormone
D) Luteinizing Hormone, Follicle Stimulating Hormone, Thyroid Stimulating Hormone

Q.15 **Over-activity of cortical hormone of adrenal gland causes**
A) Addison's disease
B) Parkinson's disease
C) Cushing's disease
D) Down's syndrome

Q.16 **How many iodine atoms are present in thyroxine?**
A) 3
B) 4
C) 2
D) 5

2015

Q.17 **Thyroxine deficiency in adults' results in a condition called:**
A) Cretinism
B) Hypothyroidism
C) Thyrotoximia
D) Myxoedema

Q.18 **α-cells of pancreas secrete a hormone known as:**
A) Glucagon
B) Insulin
C) Gastrin
D) Rennin

Q.19 **Over-secretion of cortical hormone causes a disease called;**
A) Cushing's Disease
B) Diabetes Mellitus
C) Hypoglycemia
D) Addison's Disease

Q.20 **Ejection of milk from mammary glands is under the control of which one of the following hormones?**
A) Androgen
B) Oxytocin
C) Progesterone
D) Estrogen

2016

Q.21 **_____ hormone is antagonistic to insulin and causes increase in blood glucose level.**
A) Glucagon
B) Nor-epinephrine
C) Calcitonin
D) Thyroxine

Q.22 **Beta cells of islets of Langerhans produce _____ hormone.**
A) Glucagon
B) Insulin
C) Pancreatic Juice
D) Parathormone

Q.23 **The central portion of adrenal gland (Adrenal Medulla) produces _____ hormone.**

A) Aldosterone
B) Epinephrine
C) Androgen
D) Corticosterone

Q.24 **_____ hormones are called fight and flight hormones as they prepare an organism to face stressful situation.**

A) Adrenaline, Aldosterone
B) Epinephrine, Nor-epinephrine
C) Cortisone, Oxytocin
D) Thyroxine, Nor-epinephrine

ANSWERS

Q.1	A	**Q.8**	D	**Q.15**	C	**Q.22**	B
Q.2	A	**Q.9**	B	**Q.16**	A	**Q.23**	B
Q.3	A	**Q.10**	D	**Q.17**	D	**Q.24**	B
Q.4	B	**Q.11**	C	**Q.18**	A		
Q.5	A	**Q.12**	D	**Q.19**	A		
Q.6	C	**Q.13**	D	**Q.20**	B		
Q.7	**X**	**Q.14**	B	**Q.21**	A		

6H IMMUNITY

2011

Q.1 **Thymus gland is involved in maturation of**
A) Platelets
B) B-Lymphocytes
C) Eosinophils
D) T-Lymphocytes

Q.2 **In passive immunity which of the following component are injected into blood**
A) Antigens
B) Immunogens
C) Serum
D) Immunoglobulins

Q.3 **Mucous membranes are part of body defense system and they offer**
A) Physical Barriers
B) Mechanical Barriers
C) Chemical Barriers
D) Biological Barriers

Q.4 **Immediate protection is obtained from**
A) Passive Immunity
B) Active Immunity
C) Vaccination
D) Natural Activity Immunity

Q.5 **The immunity in which T-cells recognize the antigens or micro-organisms is known as**
A) Tissue Grafting
B) Phagocytosis
C) Cell Mediated Immunity / Response
D) Hormonal Immunity / Response

2012

Q.6 **Antigen is a foreign protein or any other molecule which stimulates the formation of**
A) MHC complex
B) Immunogen
C) Mucus
D) Antibodies

Q.7 **Antibodies are produced by which of the following lymphocytes?**
A) B lymphocytes
B) A lymphocytes
C) T lymphocytes
D) B and T lymphocytes

Q.8 **T-lymphocytes become mature and competent under the influence of**
A) Liver
B) Bursa of fabricius
C) Thymus gland
D) Spleen

Q.9 **Skin and mucous membranes are part of the body defense system and they form the**
A) Physical barrier
B) Mechanical barriers
C) Chemical barriers
D) Biological barriers

Q.10 **Snake bite is treated with which type of immunization?**
A) Active
B) Passive
C) Humoral
D) Specific

2013

Q.11 **In passive immunity which of the following components are injected into body?**
A) Antigens
B) Immunogens
C) Serum
D) Immunoglobulins

Q.12 **Which part of the antibody recognizes the antigen during immune response?**
A) Heavy part
B) Variable part
C) Light part
D) Consonant part

Q.13 **Two identical light chains and two identical heavy chains in antibody molecule are linked by:**
A) Disulphide bridges
B) Peptide bond
C) Glycerol bond
D) Ionic bond

Q.14 **Antibodies are produced against invading cells by:**
A) Lymphocytes
B) Basophils
C) Basophils
D) Neutrophils

Q.15 **In the structural diagram of an antibody molecule which portion is occupied by variable chains?**
A) Lower region
B) Upper region
C) Middle region
D) In between chains

2014

Q.16 **T-lymphocytes recognize antigen and attack microorganisms or transplanted organ and tissues. This effect is called**
A) Cell-mediated response
B) Humeral immune response
C) Active immunity
D) Passive immunity

Q.17 **Which part of antibody recognizes the antigen during immune response?**
A) Heavy part
B) Light part
C) Constant part
D) Variable part

Q.18 **What type of immunity is achieved by injecting antibodies, antiserum, anti-venom serum?**
A) Active immunity
B) Passive immunity
C) Artificially induced immunity
D) Naturally induced immunity

Q.19 **Which one of the following glands is involved in the production of lymphocytes?**
A) Pineal
B) Pituitary
C) Thymus
D) Adrenal

Q.20 **Antibodies are proteins and made up of how many polypeptide chains?**
A) One
B) Two
C) Three
D) Four

2015

Q.21 **In _____ response, β-cells produce plasma cells that synthesize antibodies and release in blood plasma and tissue fluid.**
A) Cell-Mediated
B) Hormonal
C) Humoral
D) Phototactic

Q.22 **Passive immunity is used against:**
A) Malaria
B) Typhoid
C) Dengue
D) Tetanus

Q.23 **B-lymphocytes are named due to their relationship with:**
A) Blood
B) Bursa of Fabricius
C) Bone Marrow
D) Bile Duct

Q.24 **Granulocytes are:**
A) Monocytes, Eosinophils, Basophils
B) Basophils, Macrophages, Neurophils
C) Neurophils, Eosinophils, Basophils
D) Monocytes, Macrophages, Basophils

Q.25 **Response of body against the transplanted organ is:**
A) Homeostatic Response
B) Behavioral Response
C) Primary Response
D) Cell-mediated Response

2016

Q.26 **B-cells release antibodies in blood plasma, tissue fluid and lymph. This kind of immune response is called:**
A) Cell Mediated Response
B) Humoral Response
C) Active Response
D) Compound Response

Q.27 **The type of immunity in which antibodies are passed from one individual to another is called:**
A) Passive Immunity
B) Artificial Active Immunity
C) Natural Active Immunity
D) Humoral Immunity

Q.28 **To combat the active infections of tetanus, rabies and snakes the _____ method of immunization is used:**
A) Active
B) Humoral
C) Active Artificial
D) Passive

Q.29 **In antibody molecule, two heavy and two light chains are bonded by:**
A) Disulphide Bond
B) Monosulphide Bond
C) Hydrogen Bond
D) Ionic Bond

Q.30 **Variable amino acid sequences in antibody molecule are found in _____.**
A) Both light chains only
B) Both heavy chains only
C) One heavy and one light chain
D) Both heavy and light chains

ANSWERS							
Q.1	D	**Q.9**	A	**Q.17**	D	**Q.25**	D
Q.2	D	**Q.10**	B	**Q.18**	B	**Q.26**	B
Q.3	A	**Q.11**	D	**Q.19**	C	**Q.27**	A
Q.4	A	**Q.12**	B	**Q.20**	D	**Q.28**	D
Q.5	C	**Q.13**	A	**Q.21**	C	**Q.29**	A
Q.6	D	**Q.14**	A	**Q.22**	D	**Q.30**	D
Q.7	A	**Q.15**	B	**Q.23**	B		
Q.8	C	**Q.16**	B	**Q.24**	C		

7 BIOENERGETICS

2011

Q.1 **Oxidative phosphorylation, synthesis of ATP in the presence of oxygen occurs in:**
A) All Types of Cells
B) All Anaerobic Cells
C) All Primitive Cells
D) All Aerobic Cells

Q.2 **Glycolysis is the breakdown of glucose into two molecules of**
A) Glycerate
B) Lactic Acid
C) Pyruvate
D) Succinic Acid

Q.3 **Before entering Krebs's cycle, the pyruvate is first decarboxylated and oxidized into**
A) Alpha Ketoglutaric Acid
B) Citric Acid
C) Glyceric Acid
D) Acetic Acid

Q.4 **Some electron from the second primary acceptor may pass back to chlorophyll molecules by electron carrier system, yielding ATP. This process is called**
A) Phosphorylation
B) Photophosphorylation
C) Non-Cyclic Phosphorylation
D) Cyclic Phosphorylation

Q.5 **Z-scheme is used for**
A) Non-Cyclic Photophosphorylation
B) Cyclic Photophosphorylation
C) Both Cyclic and Non-Cyclic Photophosphorylation
D) Oxidative Phosphorylation

2012

Q.6 **The product(s) of cyclic photophosphorylation is / are:**
A) ATP
B) NADP
C) NADP and ATP
D) NADP, ATP, and O_2

Q.7 **Total NADH formed by one glucose molecule during Krebs's Cycle are**
A) 6
B) 3
C) 8
D) 18

Q.8 **The terminal electron acceptor in electron transport chain is**
A) Hydrogen
B) Iron
C) Cytochrome
D) Oxygen

Q.9 **The end product of glycolysis is**
A) ADP
B) Reduced FAD
C) Citric acid
D) Pyruvate

Q.10 **One molecule of $FADH_2$ is produced in Krebs's cycle during conversion of**
A) Fumarate Malate
B) Succinate Fumarate
C) Malate Oxaloacetate
D) α-Ketoglutarate Succinate

2013

Q.11 **Every molecule of NADH, fed into ETC produces:**

A) 2 ATP
B) 3 ATP
C) 4 ATP
D) 6 ATP

Q.12 **Final acceptor of electrons in respiratory chain is:**

A) Cytochrome a
B) Oxygen
C) Cytochrome a^3
D) Cytochrome c

Q.13 **The end product of anaerobic respiration in humans and other mammals is:**

A) Pyruvic acid
B) Ethanol
C) Lactic acid
D) Glucose

Q.14 **A biochemical process which occurs within a cell to breakdown complex compounds to produce energy is called:**

A) Respiration
B) Photosynthesis
C) Oxidation reduction
D) Photophosphorylation

Q.15 **Which part of chlorophyll molecule absorbs light?**

A) Phytol
B) Porphyrin ring
C) Pyrrole
D) Thylakoid membrane

2014

Q.16 **Oxidative phase of glycolysis starts with dehydrogenation of**

A) Glycolysis
B) Ribulose Bisphosphate
C) Glyceraldehyde 3-phosphate
D) NADH

Q.17 **In one turn, the Krebs's cycle produces one molecule of ATP, one molecule of $FADH_2$ and _____ molecules of NADH**

A) 1
B) 2
C) 3
D) 4

Q.18 **Which one of the following is the stage of cellular respiration for which oxygen is not essential?**

A) Glycolysis
B) Pyruvate oxidation
C) Krebs's cycle
D) Electron Transport Chain

Q.19 **Pyruvate, the end product of glycolysis moves from cytosol to mitochondrial matrix where it is oxidized into _____ producing CO_2 as a by-product.**

A) Acetic acid (active)
B) Citrate
C) NAD
D) FAD

Q.20 **Pyruvate** ⟶ **Acetyl CoA**

? ? (curved arrow)

A) $FAD^+ \rightarrow FADH$
B) $NAD^+ \rightarrow NADH$
C) $NADH \rightarrow NAD + H^+$
D) $FADH^+ \rightarrow FAD + H^+$

2015

Q.21 **In light independent stage of photosynthesis, the CO_2 combines with _____ to form an unstable 6-carbon intermediate.**

A) Ribulose bisphosphate
B) Hexose sugar
C) Glycerate-3-phosphate
D) Glyceraldehyde-9-phosphate

Q.22 **In glycolysis, glycerate-1,3-bisphosphate is converted into glycerate-3-phosphate by losing _____ phosphate molecules.**
A) 3
B) 2
C) 1
D) 4

Q.23 **Malate is oxidized by _____ to oxaloacetate in Krebs's Cycle.**
A) ATP
B) NADP
C) NAD
D) FAD

Q.24 **In electron transport chain, the electrons from NADH and $FADH_2$ are passed to;**
A) Cytochrome a
B) Cytochrome a_3
C) Co-enzyme c
D) Co-enzyme Q

Q.25 **Carriers of the respiratory chain are located on:**
A) Matrix of mitochondria
B) Outer membrane of mitochondria
C) Inner membrane of mitochondria
D) Cytoplasmic matrix

2016

Q.26 **Each _____ consists of a light gathering antenna complex and reaction center.**
A) Chlorophyll
B) Photosystem
C) Photon
D) Electron

Q.27 **Photosystem I has chlorophyll a molecules which absorb maximum light of:**
A) 680 nm
B) 780 nm
C) 700 nm
D) 580 nm

Q.28 **Cyclic flow or C4 photosynthesis produces:**
A) ATP and CO_2
B) ATP
C) Only CO_2
D) Only Oxygen

Q.29 **Immediate product formed after CO_2 fixation in Calvin Cycle is:**
A) Unstable 6-carbon compound
B) Unstable 5-carbon compound
C) Unstable 4-carbon compound
D) Unstable 3-carbon compound m

Q.30 **Functional group of chlorophyll a is:**
A) —CH_3
B) —CHO
C) —COOH
D) —OH

ANSWERS								
	Q.1	C	**Q.9**	D	**Q.17**	C	**Q.25**	C
	Q.2	C	**Q.10**	B	**Q.18**	A	**Q.26**	B
	Q.3	D	**Q.11**	B	**Q.19**	A	**Q.27**	C
	Q.4	D	**Q.12**	B	**Q.20**	B	**Q.28**	B
	Q.5	A	**Q.13**	C	**Q.21**	A	**Q.29**	A
	Q.6	A	**Q.14**	C	**Q.22**	C	**Q.30**	A
	Q.7	A	**Q.15**	B	**Q.23**	C		
	Q.8	D	**Q.16**	C	**Q.24**	D		

8 BIOTECHNOLOGY

2011

Q.1 **Prosomes are used in gene therapy against**

A) Hypercholesterolemia
B) Coronary Artery Angioplasty
C) Cystic Fibrosis
D) Severe Combined Immunodeficiency Syndrome (SCID)

Q.2 **Genetically engineered cells are introduced into bone marrow cells in the treatment of**

A) Hypercholesterolemia
B) Severe Combined Immunodeficiency Syndrome (SCID)
C) Cystic Fibrosis
D) Coronary Artery Angioplasty

Q.3 **The common vectors used in recombinant DNA technology are**

A) Probes
B) Palindromes
C) Plasmids
D) Prions

Q.4 **The enzyme used to isolate gene from DNA is**

A) Helicase
B) Reverse Transcriptase
C) Restriction Enzyme
D) DNA Polymerase

Q.5 **Which one of the following enzymes is temperature insensitive?**

A) DNA Polymerase I
B) Taq Polymerase
C) DNA Polymerase III
D) RNA Polymerase

2012

Q.6 **In recombinant DNA technology _____ are tools for manipulating DNA**

A) Viruses
B) Chromosomes
C) Enzymes
D) Genes

Q.7 **In DNA finger printing process, the use of _____ produces distinctive pattern on autoradiography or X-ray film**

A) Restriction enzyme
B) Microsatellites
C) Macrosatellites
D) Probes for genetic markers

Q.8 **In the recombinant DNA technology plasmids are used as**

A) Genetic material
B) Enzymes
C) Vectors
D) Probes

Q.9 **In which process, multiple copies of the desired genes are produced?**

A) Polymerase chain reaction
B) Gene sequencing
C) Analyzing DNA
D) DNA finger printing

Q.10 **The enzyme adenosine deaminase is missing in person suffering from:**

A) Cystic fibrosis
B) Hypercholesterolemia
C) Severe combined immunodeficiency syndrome
D) Parkinson's disease

2013

Q.11 **The DNA molecule formed from messenger-RNA by reverse transcriptase is called??**
A) Complementary DNA
B) Recombinant DNA
C) Chimeric DNA
D) Plasmid DNA

Q.12 **The agent which separates the two strands of DNA in PCR is??**
A) DNA ligase
B) Primer
C) Heat
D) Helicase

Q.13 **Cystic fibrosis patient lack a gene that codes for trans-membrane carrier of??**
A) Na^+ ions
B) Cl^- ions
C) Ca^{++} ions
D) K^+ ions

Q.14 **The phage commonly used as a vector in genetic engineering is?**
A) Lambda phage
B) Gamma phage
C) T_2 phage
D) T_4 phage

Q.15 **Restriction endonucleases are naturally occurring enzymes of:**
A) Viruses
B) Bacteria
C) Fungi
D) Plants

2014

Q.16 **pBr 322 have antibiotic resistance gene for**
A) Ampicillin and aspirin
B) Streptomycin and metronidazole
C) Ampicillin and Tetracycline
D) Penicillin and metronidazole

Q.17 **Cystic Fibrosis affects which one of the following cells of the body?**
A) Epithelial cells
B) Endothelial cells
C) Plasma cells
D) Blood cells

Q.18 **The enzymes which act as molecular scissors in recombinant DNA technology is**
A) Exonucleoses
B) Endonucleoses
C) Polymerases
D) Reverse transcriptases

Q.19 **Which of the following is the correct sequence of PCR?**
A) Heating → Cooling → Add Primer → Copying of strand
B) Heating → Add Primer → Cooling → Copying of strand
C) Add Primer → Heating → Cooling → Copying of strand
D) Cooling → Add Primer → Heating → Copying of strand

Q.20 **When two different pieces of DNA are joined together, the result is which one of the following?**
A) Complementary DNA
B) Mutated DNA
C) Recombinant DNA
D) Cloned DNA

2015

Q.21 **In cystic fibrosis, liposomes-microscopic vesicles are sued which are coated with:**
A) Healthy Gene
B) Chromosome
C) Protein
D) Carbohydrate

Q.22 **The DNA formed by the reverse transcription is called:**
A) rDNA
B) dDNA
C) cDNA
D) DNA

Q.23 **Bacterial cells take up recombinant plasmids when they are treated with:**
A) $CaCl_2$
B) NaCl
C) KCl
D) NaOH

Q.24 **Which one of the following is made up of radioactively labelled nucleotides?**
A) Phage DNA
B) Genomic Library
C) Recombinant DNA
D) Gene Probe

Q.25 **A technique in transgenic animals in which desired gene is inserted into the eggs of animal is called:**
A) Embryonic Stem Cell mediated Transfer
B) Microinjection
C) Retro-virus mediated gene Transfer
D) Virus vectors

2016

Q.26 **The modified plasmid or phage DNA is called:**
A) Clone DNA
B) Recombinant DNA
C) cDNA
D) rDNA

Q.27 **Restriction endonucleases cleave the ___________ of duplex DNA.**
A) Nitrogenous base
B) Base sugar
C) Phosphodiester bond
D) Hydrogen bond

Q.28 **The enzyme which is responsible for the formation of bond between two double stranded DNA fragments is:**
A) Endonuclease
B) Urease
C) Ligase
D) Helicase

Q.29 **XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXX.**
A) XXXXXX
B) XXXXXX
C) XXXXXX
D) XXXXXX

ANSWERS

Q.1	C	**Q.9**	A	**Q.17**	A	**Q.25**	B
Q.2	B	**Q.10**	C	**Q.18**	B	**Q.26**	B
Q.3	C	**Q.11**	A	**Q.19**	A	**Q.27**	C
Q.4	C	**Q.12**	C	**Q.20**	C	**Q.28**	C
Q.5	B	**Q.13**	B	**Q.21**	A	**Q.29**	**X**
Q.6	C	**Q.14**	A	**Q.22**	C		
Q.7	D	**Q.15**	B	**Q.23**	A		
Q.8	C	**Q.16**	C	**Q.24**	D		

9 ECOSYSTEM

2011

Q.1 **Which one of the following is depleting and causing thinning of ozone?**
A) Chlorine
B) Bromine
C) Chlorofluorocarbon
D) Carbon

Q.2 **The typical environment of a particular organism population community is called**
A) Niche
B) Ecosystem
C) Habitat
D) Biosphere

Q.3 **Excessive enrichment of water with nutrients by human activity by which large amount of living organic matter grows is called**
A) Archeotrophication
B) Eutrophication
C) Enrichment
D) Low Trophication

Q.4 **In an ecosystem, mycorrhizae is an example of**
A) Symbiosis
B) Predation
C) Commensalism
D) Parasitism

Q.5 **Successive stages of eating and being eaten by which recycling of materials and flow of energy takes place is called**
A) Food Chain
B) Food Web
C) Trophic Level
D) Food Link

2012

Q.6 **What is the niche of an organism in an ecosystem?**
A) Role played by many organisms in an ecosystem
B) Role played by a dead organism in an ecosystem
C) Role played by community of microorganisms in their ecosystem
D) Role played by an organism in its ecosystem.

Q.7 **The distinct levels or links of food chain are called**
A) Trophic level
B) Food web
C) Energy pyramid
D) Food chain

Q.8 **A relationship between two or more organisms of different species in which all partners get benefit is called**
A) Symbiosis
B) Parasitism
C) Commensalism
D) Predation

Q.9 **Bacteria and fungi are examples of**
A) Producers
B) Decomposers
C) Consumers
D) Denvers

Q.10 **The cause of acid rain is**
A) Oxides of carbon
B) Oxides of nitrogen and Sulphur
C) Oxides of Sulphur
D) Oxides of nitrogen

2013

Q.11 **In an ecosystem mycorrhizae are an example of:**

A) Predation
B) Symbiosis
C) Mutualism
D) Parasitism

Q.12 **As a result of destruction of ozone layer there is significant increase in:**

A) Ultra-violet radiations
B) Greenhouse gases
C) Nitrogen oxide
D) Sulphur oxide

Q.13 **Higher rate of a biological activity in a nutrient rich pond water is called:**

A) Water pollution
B) Air pollution
C) Eutrophication
D) Industrial effects

Q.14 **Living part of ecosystem is:**

A) lithosphere
B) Hydrosphere
C) Community
D) Biosphere

Q.15 **A living association between two living organisms of different species which is beneficial to both the partners is called:**

A) Commensalism
B) Parasitism
C) Mutualism
D) Predation

2014

Q.16 **Individual successions are known as**

A) Primary successions
B) Secondary successions
C) Seres
D) Xeroses

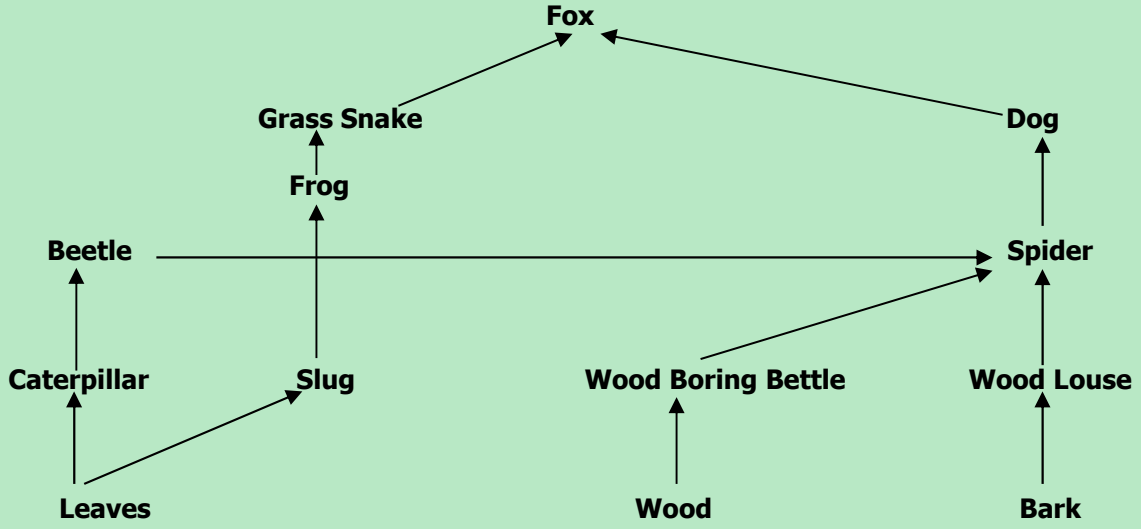
Q.17 **Which one of the following is the ultimate distributional unit within which a species is restrained by the limitations of its physical structure and physiology?**

A) Niche
B) Biome
C) Ecosystem
D) Habitat

Q.18 **All herbivores belong to which trophic level in the food chain?**

A) T1
B) T2
C) T3
D) T4

Q.19 **How many food chains are present in following food web?**



A) 5
B) 3
C) 6
D) 4

Q.20 **The relationship in which one organism gets benefit and the other is not affected is called**

A) Mutualism
B) Commensalism
C) Predation
D) Parasitism

2015

Q.21 **Ozone is a layer of atmosphere extending from _____ km above earth and absorbs ultraviolent radiations.**

A) 10-50
B) 50-60
C) 5-30
D) 10-80

Q.22 **Light rays from the sun are absorbed by CO_2 and re-radiate as _____ radiations.**

A) Ultraviolent
B) Indigo
C) Infra-Red
D) Green

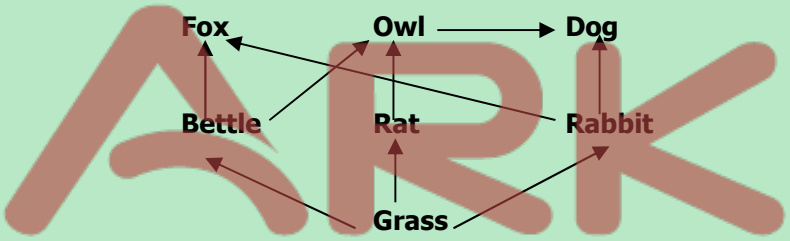
Q.23 **The gases which are produced by burning of fossils fuels and are responsible for acid rain are:**

A) CFCs
B) CO_2 and CO
C) HCl and Oxides of Nitrogen
D) SO_2 and Oxides of Nitrogen

Q.24 **During successions, the first organisms that develop on bare rock are:**

A) Lichens
B) Shrubs
C) Moss
D) Herbs

Q.25 **Trophic level of a herbivore in given food-web is:**



A) 1
B) 3
C) 4
D) 2

2016

Q.26 **The organisms of third trophic level are:**

A) Primary consumer
B) Primary producer
C) Tertiary consumer
D) Secondary consumer

Q.27 **The ultimate source of energy in an ecosystem is:**

A) Photosynthesis
B) Sun
C) Plants
D) Water

Q.28 **All the food chains and food webs begin with:**

A) Detritus
B) Herbivores
C) Green plants
D) Omnivores

Q.29 **The change from bare rock or open area is rapid, especially in the initial stages and follows a series of recognizable and hence predictable stages. This process is called:**

A) Pioneers
B) Xerosere
C) Succession
D) Secondary succession

Q.30 **The decline in the thickness of ozone layer is caused by:**

A) Increasing level of nitrogen oxide
B) Decreasing level of O_2
C) Decreasing level of CFCs
D) Increasing level of CFCs

ANSWERS								
	Q.1	C	**Q.9**	B	**Q.17**	A	**Q.25**	D
	Q.2	C	**Q.10**	B	**Q.18**	B	**Q.26**	D
	Q.3	B	**Q.11**	B	**Q.19**	D	**Q.27**	B
	Q.4	A	**Q.12**	A	**Q.20**	B	**Q.28**	C
	Q.5	A	**Q.13**	C	**Q.21**	A	**Q.29**	C
	Q.6	D	**Q.14**	D	**Q.22**	C	**Q.30**	D
	Q.7	A	**Q.15**	C	**Q.23**	D		
	Q.8	A	**Q.16**	C	**Q.24**	A		

10 EVOLUTION AND GENETICS

2011

Q.1 **The sex of individuals of next generation always depends on one of the parents who is**
A) Heterogametic
B) Homogametic
C) Isogametic
D) Isomorphic

Q.2 **Which of the following will be hemophilic?**
A) X^HX^h
B) X^HX^H
C) X^hY
D) X^HY

Q.3 **Which of the following is an example of X-linked recessive trait in humans?**
A) Hypophospatemic Rickets
B) Colour Blindness
C) Baldness
D) Beard Growth

Q.4 **Which trait in human in an example of multiple alleles?**
A) Eye Colour
B) Skin Colour
C) ABO-Blood Group
D) Rh-Blood Group

Q.5 **When a gene pair at one locus interacts with another gene at another locus, the interaction is called**
A) Dominance
B) Multiple Alleles
C) Pleiotropy
D) Epistasis

2012

Q.6 **When the presence of a gene at one locus suppresses the effect of a gene at another locus, the phenomenon is called**
A) Hypostasis
B) Pleiotropy
C) Epistasis
D) Epitropy

Q.7 **The gene for ABO-blood group systems in humans is represented by symbol:**
A) X
B) I
C) Y
D) O

Q.8 **When a single gene affects two or more traits, the phenomenon is called**
A) Epistasis
B) Pleiotropy
C) Dominance
D) Over dominance

Q.9 **The comparative embryology of all vertebrates shows development of**
A) Hairs
B) Gill pouches
C) Scales
D) Fins

Q.10 **In men, sex-determination depends upon the nature of**
A) Heterogametic male
B) Homogametic female
C) Heterogametic female
D) Homogametic male

2013

Q.11 **The structures which are reduced during the course of evolution and have no apparent function are called:**

A) Regenerated organs
B) Vestigial organs
C) Saltatory organs
D) Useless organs

Q.12 **When a gene suppresses the effect of another gene at another locus the phenomenon is termed as:**

A) Over dominance
B) Pleiotropy
C) Epistasis
D) Co-dominance

Q.13 **Phenylketonuria is an example of:**

A) Polyploidy
B) Transmutation
C) Inversion
D) Point mutation

Q.14 **A situation in which one gene affects two or more unrelated characters is called:**

A) Epistasis
B) Pleiotropy
C) Dominance relation
D) Polygenes

Q.15 **The mutation which causes change in the sequence of DNA is called:**

A) Point mutation
B) Chromosomal mutation
C) Deletion
D) Inversion

2014

Q.16 **When a gene expresses the effects of a gene at another focus, this is known as**

A) Epistasis
B) Co-dominance
C) Complete dominance
D) Mutation

Q.17 **In male the sex determining gene is**

A) XY
B) SRY
C) SYX
D) SXX

Q.18 **A gene which affects two or more unrelated characteristics is called**

A) Pleiotropic
B) Epistatic
C) Dominant
D) Mutant

Q.19 **Position of a gene within a DNA molecule is**

A) Locus
B) Origin
C) Amplicon
D) Filial

Q.20 **Sickle cell anemia is a type of**

A) Insertion
B) Transposition
C) Deletion
D) Base Substitution

2015

Q.21 **X-linked recessive trait is:**

A) Hypophosphatemia
B) Vitamin-D resistant rickets
C) Haemophilia
D) Diabetes Mellitus

Q.22 **Human skin colour is a good example of?**

A) Sex-linked inheritance
B) Polygenic inheritance
C) x-linked inheritance
D) y-linked inheritance

Q.23 **From evolutionary point of view, which respiratory protein is common in many organisms?**
A) Cytochrome a
B) Cytochrome b
C) Cytochrome c
D) Cytochrome d

Q.24 **Number of pairs of autosomes in humans in:**
A) 23
B) 24
C) 21
D) 22

Q.25 **ABO blood system is an example of:**
A) Polygenes
B) Multiple genes
C) Multiple Alleles
D) Multiple Mutation

2016

Q.26 **Which one of the following is considered as strong evidence of evolution?**
A) Embryology Record
B) Molecular Record
C) Biochemical Record
D) Fossil Record

Q.27 **Structures found in different species which are believed to have a common evolutionary origin are called:**
A) Homologous
B) Analogous
C) Vestigial
D) Fossilized

Q.28 **Which one of the following is X-linked trait?**
A) Male pattern baldness
B) Diabetes mellitus
C) Haemophilia
D) Erythroblastosis fietalis

Q.29 **A character determined by three alleles is:**
A) Human skin colour
B) Human blood group
C) Human eye colour
D) Human Rh factor

Q.30 **The total number of genes in a population is called:**
A) Gene pool
B) Allele pool
C) Genome
D) Genomic library

ANSWERS							
Q.1	A	**Q.9**	B	**Q.17**	B	**Q.25**	C
Q.2	C	**Q.10**	A	**Q.18**	A	**Q.26**	D
Q.3	B	**Q.11**	B	**Q.19**	A	**Q.27**	A
Q.4	C	**Q.12**	C	**Q.20**	D	**Q.28**	C
Q.5	D	**Q.13**	D	**Q.21**	C	**Q.29**	B
Q.6	C	**Q.14**	B	**Q.22**	B	**Q.30**	A
Q.7	B	**Q.15**	A	**Q.23**	C		
Q.8	B	**Q.16**	A	**Q.24**	D		