AIIMS B.Sc. NURSING

Memory Based Paper

2024

100 Questions

Que. 1 In a code language, if LUCK is written as L2U1C3K1, then what is the last digit for the code for XEROX in that same language?

1. 4
2. 3
3. 2
4. 1

Correct Option - **1**

Que. 2 If 'yellow' means 'green', 'green' means 'white', white means 'red', 'red' means 'black', 'black' means 'blue' and 'blue' means 'violet', which of the following represents the colour of human blood?

1. black
2. violet
3. red
4. None of these

Correct Option - **1**

Que. 3 Which is the number that comes next in this sequence?
5, 16, 51, 158, ...

1. 1452
2. 483
3. 481
4. 1454

Correct Option - **3**

Que. 4 The first official language commission was appointed in 1955. Who was the chairman of this commission?

1. KM Munshi
2. B.G Kher
3. MC Chhagla
4. Kalekar

Correct Option - **2**

Que. 5 Which of the following is/are features of the Doldrums?
1. Weak horizontal movement of air
2. Low Pressure on ground

3. Presence around equator

Select the option from the codes given below:

1. Only 1 & 2
2. Only 2 & 3
3. Only 1 & 3
4. 1, 2 & 3

Correct Option **- 4**

Que. 6 Buccal cavity is a component of which organ system?

1. Digestive system
2. Circulatory system
3. Respiratory system
4. Reproductive system

Correct Option **- 1**

Que. 7 The sacred books of the Jainas are known as?

1. Agama
2. Tripitaks
3. Shruti
4. None of the above

Correct Option **- 1**

Que. 8 Chaliyar River, recently seen in news, originates from which hills?

1. Elambalari Hills
2. Nelliyampathy Hills
3. Kalrayan Hills
4. Coonoor Hills

Correct Option **- 1**

Que. 9 Pobitora Wildlife Sanctuary, recently seen in news, is located in which state?

1. Nagaland
2. Manipur
3. Assam
4. Arunachal Pradesh

Correct Option **- 3**

What is a Bailey bridge, recently seen in news?

Que. 10

1. A modular, prefabricated bridge designed for quick assembly with minimal construction work
2. A stone bridge
3. A wooden bridge used in rural areas
4. A type of suspension bridge

Correct Option **- 1**

Que. 11 If P, Q and R are physical quantities, having different dimensions, then which mathematical operation given below can never be physically meaningful?

1. (P-Q)/R
2. PQ-R
3. PQ/R
4. $(PR - Q^2)/R$

Correct Option **- 1**

Que. 12 The position vector of a particle changes with time according to the relation $\vec{r}(t) = 15t^2\,\hat{i} + \left(4 - 20t^2\right)\,\hat{j}$. What is the magnitude of the acceleration at t = 1?

1. 40
2. 25
3. 100
4. 50

Correct Option **- 4**

Que. 13 The ranges and heights for two projectiles projected with the same initial velocity at angles 42° and 48° with the horizontal are R_1, R_2 and H_1, H_2 respectively. Choose the correct option:

1. $R_1 > R_2$ and $H_1 = H_2$
2. $R_1 = R_2$ and $H_1 < H_2$
3. $R_1 < R_2$ and $H_1 < H_2$
4. $R_1 = R_2$ and $H_1 = H_2$

Correct Option **- 2**

Que. 14 A cyclist moving at a speed of 20 m/s takes a turn, if he doubles his speed then chance of overturn

1. is doubled
2. is halved
3. becomes four times
4. becomes 1/4 times

Correct Option **- 3**

Que. 15 A car is negotiating a curved road of radius R. The road is banked at an angle θ. the coefficient of friction between the tyres of the car and the road is μ_s. The maximum safe velocity on this road is:

1. $\sqrt{gR^2\frac{\mu_s+\tan\theta}{1-\mu_s\tan\theta}}$
2. $\sqrt{gR\frac{\mu_s+\tan\theta}{1-\mu_s\tan\theta}}$
3. $\sqrt{\frac{g}{R}\frac{\mu_s+\tan\theta}{1-\mu_2\tan\theta}}$
4. $\sqrt{\frac{g}{R^2}\frac{\mu_s+\tan\theta}{1-\mu_s\tan\theta}}$

Correct Option - **2**

Que. 16 Two solid rubber balls A and B having masses 200 & 400 gm respectively are moving in opposite direction with velocity of A equal to 0.3 m/sec. After collision the two balls come to rest when the velocity of B is

1. 0.15 m/sec
2. 1.5 m/sec
3. -0.15 m/sec
4. None of these

Correct Option - **1**

Que. 17 A sphere rolls down an inclined plane without slipping. What fraction of its total energy is rotational ?

1. $\frac{2}{7}$
2. $\frac{3}{7}$
3. $\frac{4}{7}$
4. $\frac{5}{7}$

Correct Option - **1**

Que. 18 For a satellite orbiting in an orbit, close to the surface of earth, to escape, the percentage increase in the velocity is _____.

1. 41%
2. 61%
3. 81%
4. 98%

Correct Option - **1**

Que. 19 The orbital velocity of an artificial satellite in a circular orbit just above the earth's surface is v_0. For a satellite orbiting at an altitude of half of the earth's radius, the orbital velocity is

1. $\left(\sqrt{\left(\frac{2}{3}\right)}\right) v_0$
2. $\frac{2}{3} v_0$
3. $\frac{3}{2} v_0$
4. $\sqrt{\left(\frac{3}{2}\right)} v_0$

Correct Option **- 1**

Que. 20 Wax is coated on the inner wall of a capillary tube and the tube is then dipped in water. Then, compared to the unwaxed capillary, the angle of contact θ and the height h upto which water rises change. These changes are:

1. θ increases and h also increases
2. θ decreases and h also decreases
3. θ increases and h decreases
4. θ decreases and increases

Correct Option **- 3**

Que. 21 A soap bubble of radius R is surrounded by another soap bubble of radius 2R, as shown. Take surface tension = S. Then the pressure inside the smaller soap bubble, in excess of the atmospheric pressure, will be

1. 4S/R
2. 35/R
3. 6S/R
4. None of these

Correct Option **- 3**

Que. 22 The work done in increasing the size of a soap film from 10 cm × 6 cm to 10 cm × 11 cm is 3×10^{-4} joule. The surface tension of the film is:

1. 1.5×10^{-2} N/m
2. 3.0×10^{-2} N/m
3. 6.0×10^{-2} N/m
4. 11.0×10^{-2} N/m

Correct Option - **2**

Que. 23 In an isothermal process, the amount of heat given to a system is equal to

1. net increase in internal energy
2. net work done by the system
3. net decrease in internal energy
4. net change in volume

Correct Option - **2**

Que. 24 A carnot engine takes in 3000 kcal of heat from a reservoir at 627°C and gives it to a sink at 27°C. The work done by the engine is

1. 4.2×10^6 J
2. 8.4×10^6 J
3. 16.8×10^6 J
4. zero

Correct Option - **2**

Que. 25 If E is the translational kinetic energy, then which of the following relation holds good

1. PV = E
2. PV = $\frac{3}{2}$E
3. PV = 3E
4. PV = $\frac{2}{3}$E

Correct Option - **4**

Que. 26 When a sound wave goes from one medium to another, the quantity that remains unchanged is

1. frequency
2. amplitude
3. wavelength
4. speed

Correct Option - **1**

Que. 27 In the wave equation

$y = 0.5 \sin \frac{2\pi}{\lambda} (400t - x)m$

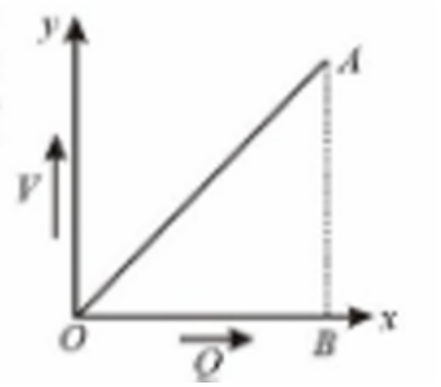
the velocity of the wave will be:

1. 200 m/s

2. $200\sqrt{2}$ m/s
3. 400 m/s
4. $400\sqrt{2}$ m/s

Correct Option **- 3**

Que. 28 Charge Q on a capacitor varies with voltage V as shown in the figure, where Q is taken along the X-axis and V along the Y-axis. The area of triangle OAB represents



1. capacitance
2. capacitive reactance
3. magnetic field between the plates
4. energy stored in the capacitor

Correct Option **- 4**

Que. 29 A parallel plate condenser with oil between the plates (dielectric constant of oil K = 2) has a capacitance C. If the oil is removed, then capacitance of the capacitor becomes

1. $\sqrt{2}C$
2. 2C
3. $\frac{C}{\sqrt{2}}$
4. $\frac{C}{2}$

Correct Option **- 4**

Que. 30 A dielectric slab is inserted between the plates of an isolated charged capacitor. Which of the following quantities remain unchanged?

1. The charge on the capacitor
2. The stored energy in the Capacitor
3. The potential difference between the plates
4. The electric field in the capacitor

Correct Option **- 1**

Which one of the following electrical meter has the smallest resistance?

Que. 31

1. Ammeter
2. Milliameter
3. Galvanometer
4. Voltmeter

Correct Option - **2**

Que. 32 The current in the primary circuit of a potentiometer wire is 0.5 A, ρ for the wire is 4×10^{-7} Ω-m and area of cross- section of wire is 8×10^{-6} m^2. The potential gradient in the wire would be

1. 25 mV/meter
2. 2.5 mV/meter
3. 25 V/meter
4. 10 V/meter

Correct Option - **1**

Que. 33 The period of oscillation of a magnet in a vibration magnetometer is 2 sec. The period of oscillation of a magnet whose magnetic moment is four times that of the first magnet is

1. 1 sec
2. 5 sec
3. 8 sec
4. 0.5 sec

Correct Option - **1**

Que. 34 In an AC generator, a coil with N turns, all of the same area A and total resistance R, rotates with frequency ω in a magnetic field B. The maximum value of emf generated in the coil is

1. N.A.B.R.ω
2. N.A.B.
3. N.A.B.R.
4. N.A.B.ω

Correct Option - **4**

Que. 35 A oscillator using a resonant circuit with an inductor L (of negligible resistance) and a capacitor C in series produce oscillations of frequency f. If L is doubled and C is changed to 4C, the frequency will be

1. 8f
2. $f/2\sqrt{2}$
3. f/2
4. f/4

Correct Option - **2**

Que. 36 Given below is a list of E.M spectrum and its use. Which one does not match?

1. U.V rays - finger prints detection
2. I.R. rays - Secret writing on ancient walls
3. X-rays - Atomic structure
4. Microwaves - forged document detection

Correct Option **- 4**

Que. 37 A ray of light passes through an equilateral prism such that the angle of incidence is equal to the angle of emergence and the latter is equal to 3/4th of the angle of prism. The angle of deviation is

1. 45°
2. 39°
3. 20°
4. 30°

Correct Option **- 4**

Que. 38 A beam of natural light falls on a system of 5 polaroids, which arranged in succession such that the pass axis of each polaroid is turned through 60° with respect to the preceding one. The fraction of the incident light intensity that passes through the system is

1. $\frac{1}{64}$
2. $\frac{1}{32}$
3. $\frac{1}{256}$
4. $\frac{1}{512}$

Correct Option **- 4**

Que. 39 A steel ball of mass m is moving with a kinetic energy K. The de Broglie wavelength associated with the ball is

1. $\frac{h}{2mK}$
2. $\sqrt{\frac{h}{2mK}}$
3. $\frac{h}{\sqrt{2mK}}$
4. meaningless

Correct Option **- 3**

Que. 40 When the wavelength of radiation falling on a metal is changed from 500 nm to 200 nm, the maximum kinetic energy of the photoelectrons becomes three times larger. The work function of the metal is close to:

1. 0.81 eV

2. 1.02 eV
3. 0.52 eV
4. 0.61 eV

Correct Option - **4**

Que. 41 An example of covalent solid is

1. MgO
2. Mg
3. SiC
4. CaF_2

Correct Option - **3**

Que. 42 The molality (in mol kg^{-1}) of 1 mole of solute in 50 g of solvent is

1. 10
2. 20
3. 30
4. 40

Correct Option - **2**

Que. 43 Which of the following molecules is eliminated during peptide bond formation?

1. H_2O
2. NH_3
3. CH_3OH
4. CO_2

Correct Option - **1**

Que. 44 In which of the following pairs, both molecules possess dipole moment?

1. CO_2, BCI_3
2. BCL_3, NF_3
3. CO_2, SO_2
4. SO_2,NF_3

Correct Option - **4**

Que. 45 The electrolyte used in mercury cell is

1. Moist paste of NH_4Cl and $ZnCl_2$

2. 38% solution of H_2SO_4
3. Paste of KOH and ZnO
4. Paste of $MgCl_2$, and HgO

Correct Option **- 3**

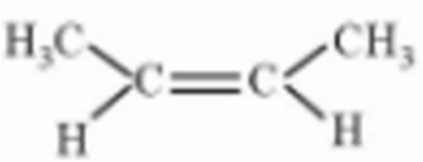
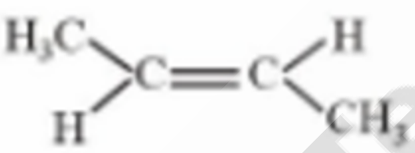
Que. 46 Which one of the following ores does not contain iron"

1. Hematite
2. Magnetite
3. Calamine
4. Siderite

Correct Option **- 3**

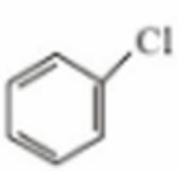
Que. 47 The major product formed in the following reaction is

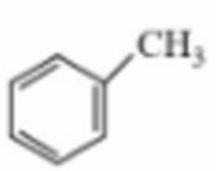
$$H_3C - C = C - CH_3 + Na \xrightarrow{\text{Liquid } NH_3}$$

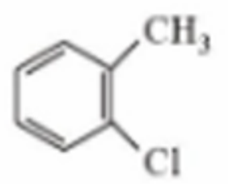
1. $H_3C - CH_2 - C = C^-Na^+$
2. $H_3C - C = C - CH_2^-Na^+$
3. 
4. 

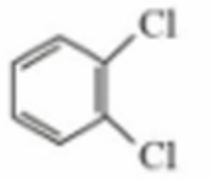
Correct Option **- 4**

Que. 48 The product (Z) of the following reaction is

1. 

2. 

3. 

4. 

Correct Option - **2**

Que. 49 A process will be spontaneous at all temperatures if:

1. $\Delta H > 0$ and $\Delta S < 0$
2. $\Delta H < 0$ and $\Delta S < 0$
3. $\Delta H < 0$ and $\Delta S > 0$
4. $\Delta H > 0$ and $\Delta S > 0$

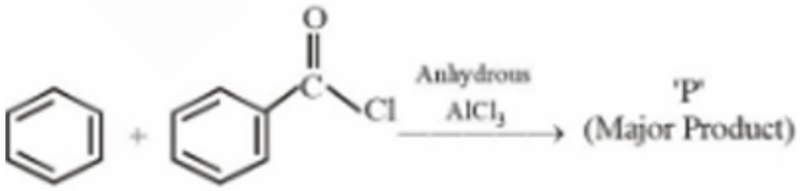
Correct Option - **3**

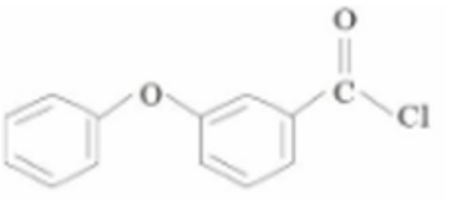
Que. 50 In alkaline medium, MnO_4^- oxidises I^- to

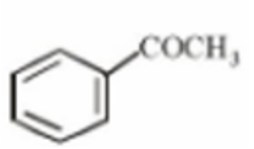
1. IO^-
2. IO_4^-
3. I_2
4. IO_3^-

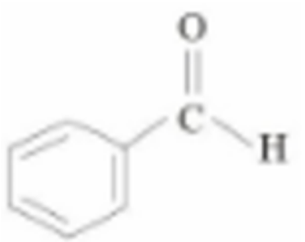
Correct Option - **4**

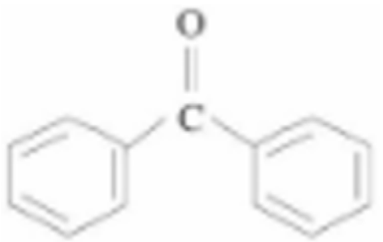
Que. 51 Identify major product 'P' formed in the following reaction.



1. 

2. 

3. 

4. 

Correct Option - **4**

Que. 52 Type of isomerism which exists between $[Pd(C_6H_5),(SCN)_2]$ and $[Pd(C_6H_5),(NCS)_2]$ is:

1. Linkage isomerism
2. Coordination isomerism
3. Ionisation isomerism
4. Solvate isomerism

Correct Option - **1**

Que. 53 The number of atoms per unit cell of BCC structure is

1. 1
2. 2
3. 4
4. 6

Correct Option - **2**

Que. 54 The reaction $2N_2O_5 \rightleftharpoons 2N_2O_4 + O_2$ is

1. Bimolecular and second order

2. Unimolecular and first order
3. Bimolecular and first order
4. Bimolecular and zero order

Correct Option - **3**

Que. 55 Which one of the following has the same number of atoms as are in 6g of H_2O?

1. 0.4g He
2. 22g CO_2
3. 1g H_2
4. 12g CO

Correct Option - **3**

Que. 56 In water, which of the following gases has the highest Henry's law constant at 293 K?

1. N_2
2. O_2
3. He
4. H_2

Correct Option - **3**

Que. 57 Arrange the oxides CrO, CrO_3 and Cr_2O_3 in the decreasing order of acidic strength

1. $CrO_3 > Cr_2O_3 > CrO$
2. $CrO_3 > CrO > Cr_2O_3$
3. $CrO > Cr_2O_3 > CrO_3$
4. $CrO > CrO_3 > Cr_2O_3$

Correct Option - **1**

Que. 58 Which of the following alkyl halide is most reactive towards substitution by S_NI mechanism?

1. $(CH_3)_3C$-Br
2. $(CH_3)_3C$-I
3. $(CH_3)_3C$-F
4. $(CH_3)_3C$-Cl

Correct Option - **2**

Que. 59 Which of the following ions has the maximum magnetic moment?

1. Mn^{+2}
2. Fe^{+2}
3. Ti^{+2}
4. Cr^{+2}

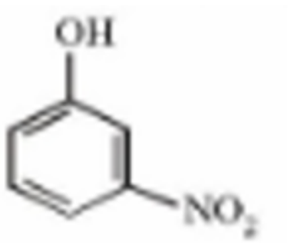
Correct Option - **1**

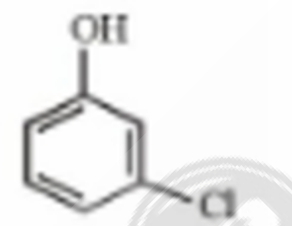
Que. 60 The octahedral diamagnetic low spin complex among the following is

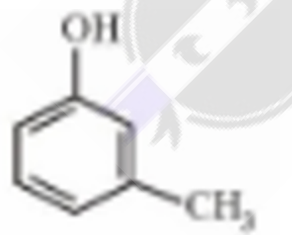
1. $[NiCl_4]^{2-}$
2. $[CoCl_6]^{3-}$
3. $[CoF_6]^{3-}$
4. $[Co(NH_3)_6)^{3+}$

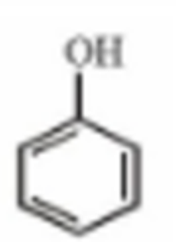
Correct Option - **4**

Que. 61 The strongest acid from the following is

1. 

2. 

3. 

4. 

Correct Option - **1**

Que. 62 Identify the non-reducing sugar from the following:

1. Maltose
2. Sucrose
3. Lactose
4. Glucose

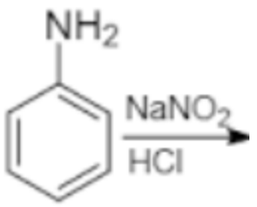
Correct Option - **2**

Que. 63 Clemmensen reduction of a ketone is carried out in the presence of:

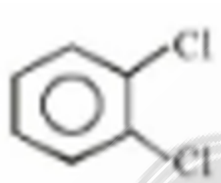
1. $LiAlH_4$
2. Zn-Hg with HCl
3. Glycol with KOH
4. H_2 with Pt as catalyst

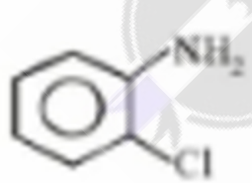
Correct Option - **2**

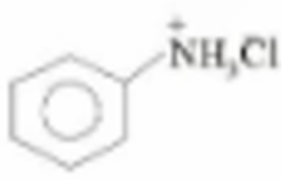
Que. 64 The product A formed in the following reaction is

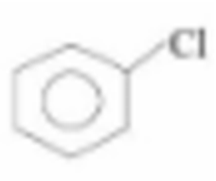


A

1. 

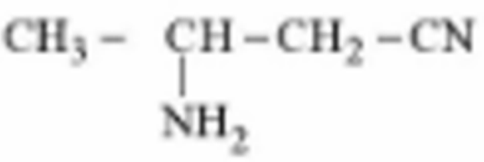
2. 

3. 

4. 

Correct Option - **4**

Que. 65 IUPAC name of following compound is:



1. 2-Aminopentanenitrile
2. 2-Aminobutanenitrile
3. 3-Aminobutanenitrile
4. 3-Aminopropanenitrile

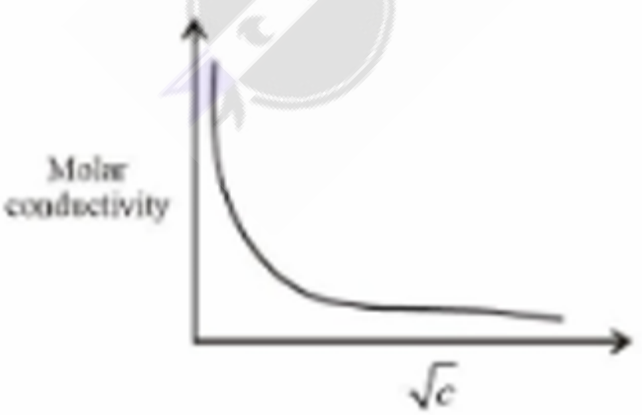
Correct Option - **3**

Que. 66 'Adsorption' principle is used for which of the following purification method?

1. Chromatography
2. Sublimation
3. Extraction
4. Distillation

Correct Option - **1**

Que. 67 The variation of molar conductivity with concentration of n electrolyte (X) in aqueous solution is shown in the given figure.



The electrolyte X is:

1. HCI

2. NaCl
3. KNO_3
4. CH_3COOH

Correct Option **- 4**

Que. 68 The noble gas that does NOT occur in the atmosphere is:

1. He
2. Kr
3. Ne
4. Ra

Correct Option **- 4**

Que. 69 For the gaseous reaction, $N_2O_5 \rightarrow 2NO_2 + \frac{1}{2}O_2$ the rate can be expressed as

$-\frac{d[N_2O_5]}{dt} = K_1[N_2O_5]$

$+\frac{d[NO_2]}{dt} = K_2[N_2O_5]$

$+\frac{d[O_2]}{dt} = K_3[N_2O_5]$

The correct relation between K_1, K_2 and K_3 is

1. $K_1 = 2K_2 = 4K_3$
2. $2K_1 = K_2 = 4K_3$
3. $2K_1 = 3K_2 = 4K_3$
4. $4K_1 = 2K_2 = K_3$

Correct Option **- 2**

Que. 70 Which one of the following is applicable for an adiabatic expansion of an ideal gas?

1. $\Delta E = 0$
2. $\Delta W = \Delta E$
3. $\Delta W = -\Delta E$
4. $\Delta W = 0$

Correct Option **- 2**

Que. 71 Which is not related to Aminocentesis.

1. Klinefelter syndrome
2. Turner syndrome
3. Down's syndrome
4. Jaundice

Correct Option - **4**

Que. 72 Taxonomy refers to

1. Identification
2. Nomenclature
3. Classification
4. All of above

Correct Option - **4**

Que. 73 Three germ layer and Mesoderm lines space called

1. Coelom
2. Pseudocoelom
3. Acoelom
4. None of these

Correct Option - **1**

Que. 74 Bond in the DNA chain

1. Phosphodiester
2. Hydrogen
3. Glycosidic bond
4. All of these

Correct Option - **4**

Que. 75 Incorrect statement about metaphase stage.

1. Spindle fibres are attached to small disc-shaped structure at the surface of centromeres called kinetochores.
2. The plane of alignment of the homologous pair of chromosomes at metaphase is referred to as metaphasic plate.
3. Chromosomes appear to be made up of two sister chromatids.
4. Centromere division.

Correct Option - **4**

Que. 76 Incorrect about Trichome

1. Unicellular
2. Multicellular
3. Present in stem
4. Epidermal tissue system

Correct Option - **1**

Que. 77 Sliding theory states that

1. Actin and myosin filaments shorten and slide past each other.
2. When myofilaments slide past each other, shortening of actin filaments occur.
3. When myofilaments slide past each other shortening of myosin filaments occur.
4. Actin and myosin filaments do not shorten they only past each other.

Correct Option - **4**

Que. 78 Tidal volume

1. 2500 - 3000 ml
2. 500 ml
3. 1100 - 1200 ml
4. 1000 - 1100 ml

Correct Option - **2**

Que. 79 Match the names of the scientists with their contributions and choose the correct answer.

Column-I Contributions		**Column-II Name of scientists**	
A.	PCR	(i)	Hershey & Chase
B.	DNA Fingerprinting	(ii)	Kary Mullis
C.	DNA genetic material	(iii)	Messelson & Stahl
D.	Semiconservative replication	(iv)	Alec Jeffreys

1. A-(iii), B-(ii), C-(iv), D-(i)
2. A (ii), B-(iv), C-(i), D-(iii)
3. A-(ii), B-(iii), C-(i), D-(iv)
4. A-(ii), B-(iv), C-(iii), D-(i)

Correct Option - **2**

Que. 80 Match the following (column-I with column-II).

Column-I (Microbes)		**Column-II (Organic acid)**	
A.	Aspergillus niger	(i)	Butyric acid
B.	Clostridium butylicum	(ii)	Citric acid
C.	Acetobacter aceti	(iii)	Lactic acid
D.	Lactobacillus	(iv)	Acetic acid

1. A-(i), B-(iii), C-(iv), D-(ii)
2. A-(iii), B-(i), C-(iv), D-(ii)
3. A-(ii), B-(i), C-(iv), D-(iii)
4. A-(i), B-(ii), C-(iii), D-(iv)

Correct Option - **3**

Que. 81 Sleep wake cycle regulated by

1. Melatonin (pineal gland)
2. GH (pituitary gland)
3. Adrenaline (adrenal gland)
4. Thyroxin (thyroid gland)

Correct Option - **1**

Que. 82 Heart Dub sound originated from

1. closure of S.L.V.
2. closure of A.V.
3. closure of T.V.
4. closure of V.V.

Correct Option - **1**

Que. 83 Glycolysis end product is

1. PGA
2. Pyruvic Acid (PA)
3. Acetyl CoA
4. Citric Acid

Correct Option - **2**

Que. 84 Which is not a product of light reaction?

1. NADPH
2. H_2O
3. O_2
4. ATP

Correct Option - **2**

Que. 85 Which type of antibody present in colostrum

1. IgG

2. IgM
3. IgA
4. IgE

Correct Option - **3**

Que. 86 ABA is a derivative of

1. Carotenoids
2. Adenine
3. IAA
4. ABA

Correct Option - **1**

Que. 87 Adenine derivative is

1. ABA
2. Auxin
3. Cytokinin/Kinetin
4. GA

Correct Option - **3**

Que. 88 Which neuron have one dendron and one axon

1. multipolar
2. bipolar
3. apolar
4. pseudopolar

Correct Option - **2**

Que. 89 Which of following does not cause degradation of the cell wall

1. Lipase
2. Pectinase
3. Lysozyme
4. Chitinase

Correct Option - **1**

Que. 90 Female heterogamety is

1. XX - XY
2. ZW - ZZ
3. XX - XO

4. YY - XX

Correct Option - **2**

Que. 91 The hormone that maintains the endometrium.

1. Estrogen
2. Progesterone
3. Relaxin
4. Androgen

Correct Option - **2**

Que. 92 Bt-toxin is activated in

1. alkaline pH of gut
2. Acidic pH of gut
3. Neutral pH of gut
4. None of these

Correct Option - **1**

Que. 93 Which component of blood is not related to blood coagulation?

1. Plasma
2. Serum
3. Fibrinogen
4. Thrombin

Correct Option - **2**

Que. 94 In 100 ml deoxygenated blood, blood carries _____ ml CO_2 to alveoli.

1. 4 ml
2. 5 ml
3. 15 ml
4. 20 ml

Correct Option - **1**

Que. 95 Where is maximum diversity found?

1. Species
2. Phylum
3. Family
4. Genus

Correct Option - **2**

Que. 96 Which has the least similarity?

1. Species
2. Phylum
3. Family
4. Genus

Correct Option - **2**

Que. 97 Which relationship does Lichen show?

1. Commensalism
2. Parasitism
3. Mutualism
4. Amensalism

Correct Option - **3**

Que. 98 Balanoglossus is a member of which phylum?

1. Arthropoda
2. Mollusca
3. Coelenterata
4. Hemichordata

Correct Option - **4**

Que. 99 Which one is not a false fruit?

1. Apple
2. Strawberry
3. Cashew
4. Mango

Correct Option - **4**

Que. 100 Enzyme/microorganism that helps in clot dissolution.

1. Cyclosporin
2. Pectinase
3. Streptokinase
4. Protease

Correct Option - **3**