Previous Paper Questions

1. Q.Id: 166080

Identify the correct match between the codons and coding funtions.

List1	List2
A. AUG	1. Phenylalanine
B. UAA	2. Methionine
C. UUU	3. Tryptophan
D. UGG	4. Termination

A) A-> 1, B-> 4, C-> 2, D-> 3 **B)** A-> 2, B-> 4, C-> 1, D-> 3

C) A-> 4, B-> 3, C-> 2, D-> 1 **D)** A-> 4, B-> 1, C-> 3, D-> 2

2. Q.Id: 166079

Match the following columns and choose the correct option.

List1	List2
A. tRNA	I. Linking of amino acids
B. mRNA	II. Transfer of genetic information
C. rRNA	III. Nucleolar organising region
D. Peptidyl transferase	IV. Transfer of amino acid from cytoplasm to ribosome

A) A-> 4, B-> 2, C-> 3, D-> 1 **B)** A-> 1, B-> 4, C-> 3, D-> 2

C) A-> 1, B-> 2, C-> 3, D-> 4 **D)** A-> 1, B-> 3, C-> 2, D-> 4

3. Q.Id: 166078

Match the following

List1	List2
A. Haplontic life cycle	1. Bryophytes and pteridophytes
B. Diplontic lif cycle	2. Gymnosperms and angiosperms
C. Halpo - diplontic life cycle	3. Volvox, Spirogya and Chlamydomonas

A) A-> 3, B-> 1, C-> 2 **B)** A-> 1, B-> 2, C-> 3

C) A-> 2, B-> 3, C-> 1 **D)** A-> 3, B-> 2, C-> 1

4. Q.Id: 166077

Match the following columns and select the correct option.

List1	List2
A. S-phase	I. Duplication of mitochondria
B. M-phase	II. Phase between mitosis and initiation of DNA replication
C. G_1-phase	III. Centriole duplicates in the cytoplasm of animal cells
D. G_2-phase	IV. Shortest phase of cell cycle

A) A-> IV, B-> I, C-> II, D-> III **B)** A-> III, B-> IV, C-> II, D-> I

C) A-> III, B-> II, C-> IV, D-> I **D)** A-> II, B-> III, C-> IV, D-> I

5. Q.Id: 165897

Why water hyacinth is called Terror of Bengal?

A) It is being used as food for fish

B) It consumes oxygen from cultivated plant and destroy them

C) It consumes oxygen from water and decreases O_2 concentration in water

D) It is a weed

6. Q.Id: 165491

Calvin cycle can be described under three stages. These stages are

I. carboxylation

II. ligation

III. reduction

IV. regeneration

Select the correct option

A) II, III and IV

B) I, III and IV

C) I, II and IV

D) I, II and III

7. Q.Id: 164346

Mendel cross tall and dwarf plant. In F_2-generation the observed ratio was 3:1 (tall: short). From this result, he deduced

I. law of dominance

II. law of independent assortment

III. law of segregation

IV. incomplete dominance

Choose the correct option

A) I, II, III and IV

B) I and III

C) II, III and IV

D) I, II and III

8. Q.Id: 158398

Match the column I and column II and select the correct option.

List1	List2
A. Auxin	1. Herring sperm DNA
B. Cytokinin	2. Inhibitor of growth
C. Gibberellin	3. Apical dominance
D. Ethylene	4. Epinasty
E. Abscisic acid	5. Induces amylase synthesis

A) A-> 3, B-> 1, C-> 5, D-> 4, E-> 2

B) A-> 4, B-> 5, C-> 1, D-> 3, E-> 2

C) A-> 2, B-> 1, C-> 5, D-> 3, E-> 2

D) A-> 3, B-> 1, C-> 5, D-> 2, E-> 2

9. Q.Id: 157784

What are X and Y in the following reactions? $RCHO \xrightarrow{X} A \xrightarrow{Y} RCN$

A) X: $C_6H_5SO_2Cl/C_2H_5N/343K$ Y: NH_2OH

B) X: $NaNO_2/HCl$ Y: NH_2OH

C) X: NH_2OH Y: $C_6H_5SO_2Cl/C_5H_5N/343\,K$

D) X: $Cu/573\,K$ Y: $(CH_3CO)_2O$

10. Q.Id: 157783

Identify X in the following reaction $\text{acetone} \xrightarrow[\Delta]{1)\ Ba(OH)_2} X$

A) 4 - methylpent - 3 - ene - 2- one

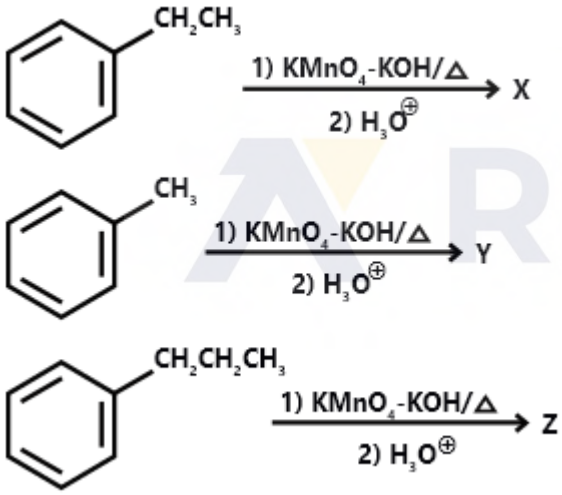
B) 3- methylpent -3-ene 2- one

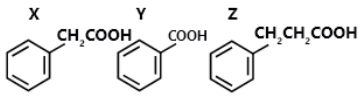
C) hex-3-ene-2-one

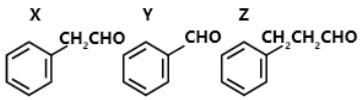
D) pent-3-ene-2-one

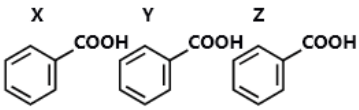
11. Q.Id: 157782

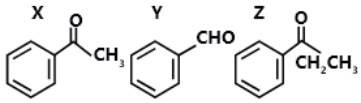
What are X. Y and Z in the following reactions ?



A) 

B) 

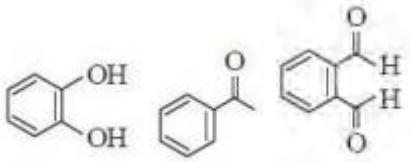
C) 

D) 

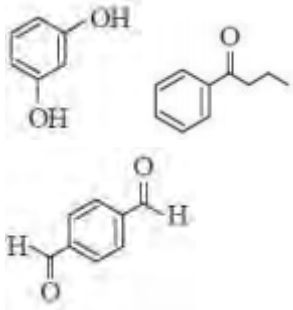
12. Q.Id: 157781

Structures of catechol (I), propiophenone (II) and phthalaldehyde (III) are

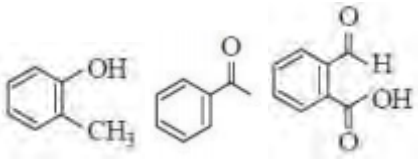
A) I II III



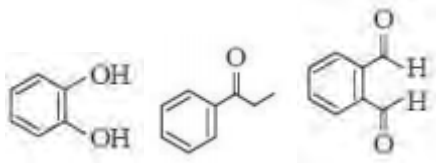
B) I II III



C) I II III



D) I II III



13. Q.Id: 157780

Lucas reagent is

A) Br_2/CCl_4

B) $KMnO_4/H^{\oplus}$

C) $HCl/$ anhydrous $ZnCl_2$

D) $C_6H_5SO_2Cl$

14. Q.Id: 157779

What are a, b. c and d in the following reaction ?

$$a(CH_3)_3C-OH+b\ Al \rightarrow c\left[(CH_3)_3C-O-\right]_3 Al+dH_2$$

A) $\frac{a}{6}\ \frac{b}{2}\ \frac{c}{2}\ \frac{d}{3}$

B) $\frac{a}{3}\ \frac{b}{1}\ \frac{c}{1}\ \frac{d}{2}$

C) $\frac{a}{4}\ \frac{b}{1}\ \frac{c}{1}\ \frac{d}{2}$

D) $\frac{a}{4}\ \frac{b}{2}\ \frac{c}{1}\ \frac{d}{2}$

15. Q.Id: 157778

The order of reactivity of chlorobenzene (I), 4 -nitrochloro benzene (II), 2, 4, 6 - trinitrochloro benzene (III) and 2. 4 - dinitrochlorobenzene (IV) towards nucleophilic substitution is

A) III > II> IV > I

B) III IV II > I

C) II > III > IV I

D) I> II> IV II

16. Q.Id: 157777

Match the following

List1	List2
A. Receptor	I. Noradrenaline
B. Bactericidal	II. Tetracycline
C. Neurotransmitter	III. Protein
D. Bacteriostatic	IV. Ranitidine
E. .	V. Penicillin

A) A->i, B->v, C->iii, D->ii

B) A->iii, B->v, C->i, D->ii

C) A->iii, B->iv, C->v, D->ii

D) A->iv, B->ii, C->i, D->v

17. Q.Id: 157776

Examples of fibrous (X) and globular (Y) proteins are

A) X Y
insulin albumin

B) X Y
Keratin albumin

C) X Y
Keratin thyroxine

D) X Y
thyroxine insulin

18. Q.Id: 157775

Identify homo polymers from the following
nylon 6 Orlon bakelite glyptal neoprene
I II III IV V

A) II,III,IV

B) I,II,V

C) I,III,V

D) II,IV,V

19. Q.Id: 157774

$[ML_6]^{n+}$ is an octahedral complex. Its crystal field splitting energy(Δ_0) is 1.8 eV. If same metal ion (M^{n+}) forms a tetrahedral complex with same ligands (L), then the crystal field splitting energy (Δ_t) of$[ML_4]^{n+}$ in eV is

A) 1.8

B) 0.8

C) 4.05

D) 0.9

20. Q.Id: 157773

Which pair of elements does not exhibit multiple oxidation states?

A) Mn,Cr

B) Sc,Zn

C) Fe,Co

D) V,Ni

21. Q.Id: 157772

Which one of the following diffuses through rubber, glass and plastic?

A) He

B) Ne

C) Ar

D) Kr

22. Q.Id: 157771

Phosphorous reacts with sulphuryl chloride to form PCl_5 and X. Hot and concentrated H_2SO_4 reacts with Cu to form $CuSO_4.H_2O$ and Y. Zinc sulphide reacts with oxygen to form ZnO and Z. Then X, Y and Z are respectively

A) SO_2,SO_2,H_2S

B) SO_2,SO_2,SO_2

C) SO_2,H_2S,SO_2

D) SO_3,SO_2,SO_3

23. Q.Id: 157770

An oxoacid of P(A) on heating disproportionate to form an acid (X) and a base (Y). Y reacts with $CuSO_4$ solution to form Cu_3P_2 and sulphuric acid. A is a di basicacid. A. X and Y are respectively

A) H_3PO_4,H_3PO_3,PH_3

B) H_3PO_2,H_3PO_4,PH_3

C) H_3PO_3,PH_3,H_3PO_4

D) H_3PO_3,H_3PO_4,PH_3

24. Q.Id: 157769

In the van-Arkel method of refining Zr. the impurities (x) and the substance (y) used are respectively

A) $x=(N_2,O_2);y=Cl_2$

B) $x=(N_2,O_2);y=O_2$

C) $x=(N_2,O_2);y=I_2$

D) $x=(SO_2,O_2);y=I_2$

25. Q.Id: 157768

Which one of the following methods is used to make gold sol?

A) Ultra filtration method

B) Peptization method

C) Electrical disintegration method

D) Dialysis method

26. Q.Id: 157767

If the rate constant of zero order reaction is 3.0 x10^{-3} Ms^{-1} the time taken for the initial concentration of the reactant to fall from 0.30 M to 0.03 M in seconds is

A) 90

B) 10

C) 60

D) 30

27. Q.Id: 157766

Solutions of $CuSO_4$ and $AgNO_3$ were electrolysed with a current of 1.93 amperes for 500 seconds separately. The amounts of copper and silver deposited at cathode respectively in g are

A) 0.63, 0.54

B) 0.315, 0.54

C) 0.315, 1.08

D) 1.08, 0.315

28. Q.Id: 157765

The mole fractions of benzene and toluene vapours in equilibrium with the ideal solution of benzene in toluene at 300 K are 0.61 and 0.39 respectively. The total vapour pressure of the solution is 41 mm Hg. If the vapour pressures of pure benzene and toluene at 300K are 50 and 32 mm Hg respectively, the mole fractions of benzene and toluene in solution respectively are

A) 0.25,0.75

B) 0.75,0.25

C) 0.30,0.70

D) 0.50,0.50

29. Q.Id: 157764

The vapour pressure of a solution of 6.0 g of non-volatile solute in 390 g of benzene at 298 K is 3.00 k Pa. If 78 g of benzene is added to this solution the vapour pressure becomes 3.02 k Pa at the same temperature. The molar mass of solute in gmol^{-1} is

A) 60.8

B) 50.4

C) 31.2

D) 21.2

30. Q.Id: 157763

An element has body-centered cubic structure with a cell edge length of 300 pm. If the density of the element is 7.2 g cm^{-3}, the number of unit cells in 194.4g of the element is

A) 2.0×10^{24}

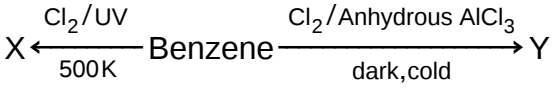
B) 6.0×10^{24}

C) 3.0×10^{24}

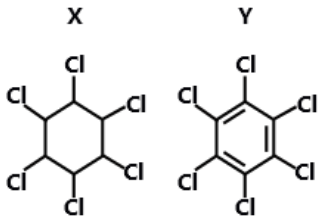
D) 1.0×10^{24}

31. Q.Id: 157762

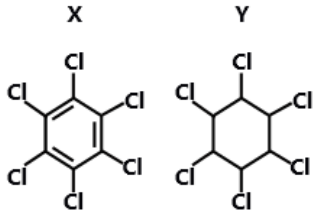
What are X and Y in the following reactions ?



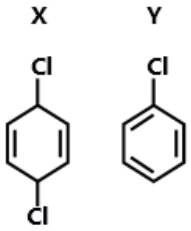
A)



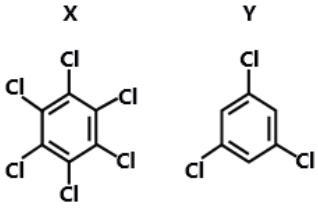
B)



C)



D)



32. Q.Id: 157761

Ozonolysis of alkene X gives acetone. X is

A) 2,3- dimethyl but- 2- ene

B) 2 - Methylpropene

C) but - 2- ene

D) 2- Methyl but -2- ene

33. Q.Id: 157760

In C and H estimation experiment, H_2O and CO_2 formed are absorbed in A and B respectively. A and B are

A) A B
anhydrous $CuSO_4$ $Ca(OH)_2$ solution

B) A B
anhydrous $CuSO_4$ KOH solution

C) A B
anhydrous $CaCl_2$ KOH solution

D) A B
anhydrous $CaCl_2$ Ca(OH) solution

34. Q.Id: 157759

Identify correct statements from the following

i. Conventional smog is a mixture of smoke, SO, and fog

ii. Conventional smog has oxidizing nature

iii. In the photochemical smog, the unburnt unsaturated hydrocarbons are converted into PAN. acrolein and HCHO

iv. Photochemical smog can be controlled by fixing catalytic converters in automobile engines

A) i,ii,iii,iv

B) i,ii,iii,only

C) iii,iv only

D) i,ii only

35. Q.Id: 157758

Identify the correct statements from the following

i. $\Delta_f H^{\ominus}$ **of graphite is taken as zero**

ii. In fullerene. every five carbon ring is fused to six carbon rings only

iii. CO_2 **is prepared by dehydrating formic acid using conc.** H_2SO_4 **at 373 K**

A) i,ii,iii

B) i,iii only

C) i,ii only

D) ii,iii only

36. Q.Id: 157757

Sodium borohydrides reacts with I_2 **to form NaI,** H_2 **and X When X reacts with NaH in di ethylether. Y is formed. What is Y?**

A) B_2H_2

B) H_3BO_3

C) B_2O_3

D) $NaBH_4$

37. Q.Id: 157756

In Portlandcement, the major constituents (in mol %) are

A) MgO, Fe_2O_3, Cr_2O_3

B) Al_2O_3, MgO, TiO_2

C) CaO, SiO_2, Al_2O_3

D) Al_2O_3, B_2O_3, MgO

38. Q.Id: 157754

What is the approximate volume (in L) of 0.02 M $KMNO_4$ **solution required to completely react with 0.5 L of 10 vol** H_2O_2 **solution in acid medium?**

A) 89.29

B) 44.64

C) 4.464

D) 8.929

39. Q.Id: 157753

Assertion (A): Higher order ionization constants (K_{a2}, K_{a3}**) are smaller than the lower order ionization constant (**K_{a1}**) of polyprotic acid**

Reason (R): It is easy to remove a H^+ **from a negative ion due to electrostatic forces**

The correct answer is

A) Both (A) and (R) are correct and (R) is the correct explanation of (A)

B) Both (A) and (B) are correct but (R) is not the correct explanation of (A)

C) (A) is correct but (R) is not correct

D) (A) is not correct but (R) is correct (A)

40. Q.Id: 157752

If the equilibrium constant, K_c for a reaction at certain temperature is $>10^3$, which one of the following statements is correct?

A) The reaction hardly proceeds

B) The products predominate over reactants at equilibrium

C) The reactants predominate over products at equilibrium

D) The equilibrium constant is less than reaction quotient

41. Q.Id: 157751

The enthalpy and entropy changes for a reaction at 298 K are 400 kJ mol^{-1} 400 J K^{-1} mol^{-1} respectively. If Δ H and ΔS are constant over the temperature range, the temperature ai which the reaction becomes spontaneous in K is

A) 1001

B) 800

C) 101

D) 500

42. Q.Id: 157750

20 mL of 0.04M $CuSO_4$ solution reacts completely with 20 mL of certain concentration of KI solution. If I_2 thus liberated reacts completely with 20 mL of sodium thiosulphate solution, the molarity of thiosulphate in mol L^{-1} is

A) 0.01

B) 0.02

C) 0.04

D) 0.08

43. Q.Id: 157749

A hydrogen, neon gas mixture contains 0.5 g of hydrogen and 10 g of neon in a cylinder. f pressure of the mixture of gases in the cylinder is 2.4 bar, the partial pressures of neon and hydrogen in the mixture respectively in bar are (H=1.0; Ne 20.0)

A) 0.9,1.5

B) 1.6,08

C) 0.8,1.6

D) 1.5,0.9

44. Q.Id: 157748

The number of electrons present in valency shell of S in SF_6, H_2SO_4 and SCl_2 are respectively

A) 12,12,6

B) 12,12,4

C) 12,8,12

D) 12,12,8

45. Q.Id: 157747

Atom X (in molecule 1) has electrons in 1s, 2s and 2p orbitals. Atom Y (in molecule 2) has electrons in 1s, 2s, 2p, 3s and 3p orbitals. Atom Z (in molecule 3) has electrons in 1s, 2s, 2p, 3s, 3p, 3d and 4s orbitals. Observe the following statements

i. Atom X can undergo sp, sp^2 and sp^3 **type of hybridisation**

ii. Atom Y can undergo sp^3, sp^3d **type of hybridisation**

iii. Atom Z can undergo sp^3d^2, d^2sp^3, dsp^2, sp^3 **type of hybridisation**

A) i,ii only

B) i,iii only

C) ii,iii only

D) i,ii,iii

46. Q.Id: 157746

Identify the correct statements from the following

i. CO is an amphoteric oxide

ii. As_2O_3 **is a neutral oxide**

iii. Cl_2O_7 **is an acidic oxide**

iv. CaO is a basic oxide IV.

A) i,ii,iii,iv

B) ii,iii,iv only

C) iii,iv only

D) iv,ii only

47. Q.Id: 157745

If the ratio of radii of electron in the first excited states of He^+ and Be^{3+} **is 2:1, the energies of electron in their corresponding excited states in J is**

A) $-2.18\times10^{-18}, -8.72\times10^{-18}$

B) $-8.72\times10^{-18}, -2.18\times10^{-18}$

C) $-2.18\times10^{-18}, -4.36\times10^{-18}$

D) $-4.36\times10^{-18}, -2.18\times10^{-18}$

48. Q.Id: 157744

The kinetic energy of electron ejected from a metal surface is 0.70 eV. If the work function (W_0**) of the metal is 2.30eV. the frequency of radiation falling on the metal surface in Hz is (1 eV 1.602 x**10^{-19} **J)**

A) 7.25×10^{13}

B) 1.38×10^{13}

C) 1.38×10^{14}

D) 7.25×10^{14}

49. Q.Id: 157743

Assertion (A): FM signal is less susceptible to noise than AM signal.

Reason (R) : FM has small operating frequency range.

A) Both (A) and (R) are correct and (R) is the correct explanation of (A)

B) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

C) (A) is correct but (R) is not correct

D) (A) is not correct but (R) is correct

50. Q.Id: 157742

The current gain of a transistor in a common emitter circuit is 25, then the ratio of emitter current to base current is

A) $\frac{25}{26}$

B) 26

C) $\frac{1}{25}$

D) $\frac{26}{25}$

51. Q.Id: 157741

Two radio active nuclei x' and 'y initially contain equal number of atoms. Their half-life periods are 1 hour and 2 hours respectively. The ratio of their rates of disintegration after 2 hours from the start is

A) 1 : 1

B) 1 : 2

C) 2 : 1

D) 1 : 3

52. Q.Id: 157740

Hydrogen atom in its ground state is excited by means of monochromatic radiation of energy 12.75 eV. The minimm energy of the emitted spectral lines is nearly

A) 0.22 eV

B) 0.44 eV

C) 0.66 eV

D) 0.88 eV

53. Q.Id: 157739

In a photoelectric effect experiment, collector plate is placed vertically above the emitter plate. Light is allowed to incident on emitter and saturation photo current is recorded. Now parallel electric and magnetic fields are applied vertically downwards between the plates. Then

A) The photo current will increase

B) The kinetic energy of photo electrons will decrease

C) The stopping potential will increase

D) The threshold wave length will increase

54. Q.Id: 157738

A parallel plate capacitor with plate area $1m^2$ and plate separation l mm is charged at the rate of 25 Vs^{-1}. The dielectric between the plates has a dielectric constant k'. If the displacement current through the capacitor is 2.21μA then the value of k' is nearly

A) 25 **B)** 20

C) 15 **D)** 10

55. Q.Id: 157737

A steady current of 2A flows when an inductor of inductance 2 mH is connected to ac source of emf 10 V. Now a capacitor of capacity 2 μF is connected in series. If the current n the circuit is along the emf, the ms value of the current is

A) 2.0 A **B)** 1.5 A

C) 5.0 A **D)** 0.2 A

56. Q.Id: 157736

A coil having 200 turns is placed in a magnetic field of $60e^{-200t}$ T with its plane perpendicular to the magnetic field. The cross sectional area of the coil is $5e^2$ cm^2. The ends of the coil are connected to 100Ω resistance. The current in the coil at t = 0.01 second is

A) 6 A **B)** 12 A

C) 18 A **D)** 24 A

57. Q.Id: 157735

A thin bar magnet oscillates with a time period T. If it is cut into two equal pieces along its axis, time period of oscillation of each piece is

A) T **B)** 2T

C) $\frac{T}{2}$ **D)** $\frac{T}{4}$

58. Q.Id: 157734

The magnetic field normal to the plane of a coil of 'n turns and radius 'r' carrying a current i is measured on the axis of the coil at a distance h" (h<<r) from the centre of the coil. This is smaller than the field at the centre by the fraction

A) $\frac{2h^2}{3r^2}$ **B)** $\frac{3r^2}{2h^2}$

C) $\frac{3h^2}{2r^2}$ **D)** $\frac{2r^2}{3h^3}$

59. Q.Id: 157733

The two ends of a non-conducting spring of force constant $50 Nm^{-1}$ and unstretched length of 2 cm are connected to the mid points of two straight parallel rods each of length 4 m. When 100 A current is passed through each rod in the same direction, the work done on the spring in mJ is

A) 0.8

B) 1.6

C) 3.2

D) 6.4

60. Q.Id: 157732

A steady current is passing through a cylindrical conductor of radius 'r' placed in vacuum. Assuming Stefan's law of radiation, steady temperature will be proportional to

A) r^{-3}

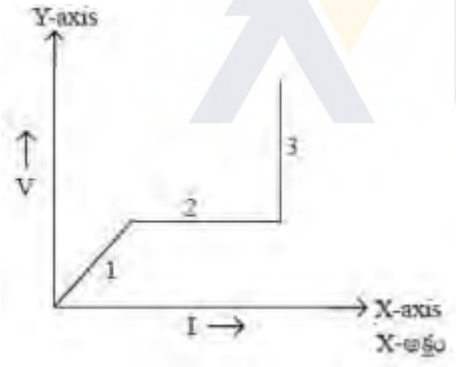
B) $r^{\frac{3}{4}}$

C) $r^{-\frac{2}{3}}$

D) $r^{-\frac{3}{5}}$

61. Q.Id: 157731

A graph drawn between current 'T' and voltage "V' in a conductor is as shown in the figure The changes in the resistance in 1^{st} and 3^{rd} parts respectively



A) Remains constant, Increases

B) Decreases, Increases

C) Increases, remains constant

D) Decreases. remains constant

62. Q.Id: 157730

A conducting spherical bubble of radius 'r' and thickness t (t<<r) is charged to a potential 'V'. If it collapses to form a small spherical drop, then the potential of the drop is

A) $V(3tr)^{\frac{1}{3}}$

B) $\left(\frac{3t}{r}\right)^{\frac{1}{3}}V$

C) $\left(\frac{r}{3t}\right)^{\frac{1}{3}}V$

D) $\left(\frac{3Vt}{r}\right)^{\frac{1}{3}}$

63. Q.Id: 157729

Two identical rings each of radius 'R' are coaxially placed a distance 'R' apart. They cary charges Q_1 and Q_2 respectively. If a charge 'q 'is moved from the centre of one ring to the centre of the other ring, the work done is

A) $\frac{q(Q_1-Q_2)(\sqrt{2}-1)}{\sqrt{2}(4\pi\epsilon_0 R)}$

B) $\frac{q\sqrt{2}(Q_1+Q_2)}{(4\pi\epsilon_0 R)}$

C) $\frac{q\sqrt{2}(Q_1+Q_2)}{4\pi\epsilon_0 R}$

D) $\frac{q(Q_1+Q_2)}{(\sqrt{2}+1)4\pi\epsilon_0 R}$

64. Q.Id: 157728

A particle of mass I kg carrying a charge of 0.01 C is able to remain at rest on a rough inclined plane of inclination 30° when a uniform horizontal electric field of $\frac{490}{\sqrt{3}}\ Vm^{-1}$ is applied. Coefficient of friction is (Acceleration due to gravity = 9.8 ms^{-2})

A) 0.5

B) $\frac{1}{\sqrt{3}}$

C) $\frac{\sqrt{3}}{7}$

D) $\frac{\sqrt{3}}{2}$

65. Q.Id: 157727

A solid conducting sphere of radius 20 cm is enclosed by a thin metallic shell of radius 40 cm. A charge of 40 μC is given to the inner sphere. If the metallic shell is earthed, then the heat generated in the process is

A) 18 J

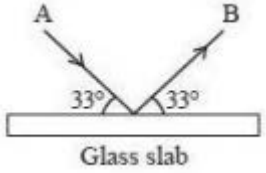
B) 9 J

C) 36 J

D) 1.8 J

66. Q.Id: 157726

A beam of light is incident on a glass slab of refractive index 1.54 in a direction as shown in the figure. The reflected light is analysed by a polaroid prism. On rotating the polaroid (tan 57° 1.54)



A) The intensity remains unchanged

B) The intensity is reduced to zero and remains at zero

C) The intensity gradually reduces to zero and then increases

D) The intensity increases gradually

67. Q.Id: 157725

Match the following List-I with the List-II

List1	List2
A. Mirages	I. Semiconductor
B. Nichrome	II. Natural convection
C. Germanium	III. Total internal reflection
D. Sea breeze	IV. High resistivity

A) A->iii, B->iv, C->i, D->ii **B)** A->iv, B->iii, C->ii, D->i

C) A->ii, B->iii, C->i, D->iv **D)** A->i, B->ii, C->iii, D->iv

68. Q.Id: 157723

A whistle of frequency 540 Hz rotates along a circle of radius 2 m at an angular speed of 15 rad s^{-1}. The difference in maximum and minimum frequencies heard by a listener at some distance and at rest with respect to the centre of the circle, is (Speed of sound in air = 330 ms^{-1})

A) 99 Hz **B)** 59 Hz

C) 49 Hz **D)** 109 Hz

69. Q.Id: 157722

A man standing far from a hill, fires a gun and hears its echo after 4 s. Later he moves 320 m from his initial position away from the hill and fires the gun again and now he hears the echo after 6 s. Then the velocity of the sound in air is

A) 330 ms^{-1} **B)** 340 ms^{-1}

C) 320 ms^{-1} **D)** 336 ms^{-1}

70. Q.Id: 157721

The number of degrees of freedom of a gas whose specific heat capacity at constant pressure is 33.24 J mol^{-1} K^{-1}, **is**
(universal gas constant = 8.31 J mol^{-1} K^{-1},**)**

A) 2 **B)** 3

C) 6 **D)** 8

71. Q.Id: 157719

A given mass of gas at a pressure 'P' and absolute temperature T' obeys the law $P\alpha T^3$ during an adiabatic process. The adiabatic bulk modulus of the gas at a pressure 'P' is

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

B) P

C) $\frac{3P}{2}$

D) 2 P

72. Q.Id: 157718

The workdone on the system in changing the state of a gas adiabatically from equilibrium state A to equilibrium state B is 32.4 J. If the gas is taken from state A to B through another process in which the net heat absorbed by the system is 13.5 cal , then the net work done by the system in the later case is (1 cal = 4.2 J)

A) 32.4 J

B) 56 J

C) 14.3 J

D) 24.3 J

73. Q.Id: 157717

The ends of a uniform metal rod of length 100 cm and area of cross-section 2 cm^2 are maintained at 0°C and 100°C. At the mid point of the rod, heat is supplied at a constant rate of $40 Js^{-1}$. If the temperature gradient on the higher temperature side of the rod in steady state is $50x^{o}Cm^{-1}$, then the value of x is (Thermal conductivity of the metal $= 400\ Js^{-1}m^{-1}K^{-1}$)

A) 2

B) 3

C) 6

D) 9

74. Q.Id: 157716

Two metal slabs of equal lengths, equal cross sectional areas and having resistances in the ratio I: 2 are connected first in series and then in parallel separately, The ratio of their effective conductivities is

A) 1 : 2

B) 1 : 4

C) 4 : 9

D) 8 : 9

75. Q.Id: 157715

In a barometer, the mercury level is 76 cm at sea level. On a hill of height 3 km. if the ratio of density of Hg to that of air is 10^4, the atmospheric pressure on the hill is

A) 26 cm of Hg

B) 46 cm of Hg

C) 36 cm of Hg

D) 56 cm of Hg

76. Q.Id: 157713

A wire is suspended vertically from a rigid support. When loaded with a body in air, the wire extends by 6 mm and when the body is immersed completely in water, the extension is reduced to 4 mm. The relative density of material of the body is

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

B) 3

C) 2

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

77. Q.Id: 157709

A number of planets are revolving around the Sun. Time period is 'T' and average orbital radius of a planet is 'R. A graph is drawn between log T on the Y-axis and log R on the X-asis with the origin at (0,0). The graph is a

A) Straight line with slope $\frac{3}{2}$ and passing through the origin

B) Straight line with slope $\frac{3}{2}$ and not passing through the origin

C) Parabola

D) Ellipse

78. Q.Id: 157708

A block of mass 1 kg tied to a long spring of spring constant 100 Nm^{-1} is at rest on a horizontal frictionless surface. The block is pulled through a distance 5 cm from its equilibrium position and released. Then the total energy of the block when it is at a distance 4 cm from the equilibrium position is

A) 0.125 J

B) 12.5 J

C) 125 J

D) 1250 J

79. Q.Id: 157707

Two blocks of masses 2 kg and3 kg are attached with mass less string passing over a fixed frictionless pulley as shown in the figure. When released, the velocity of the centre of mass of the system of two blocks after 1.5 seconds is (Acceleration due to gravity = 10 ms^{-2})

A) 0.8 ms^{-1} upward

B) 0.6 ms^{-1} upward

C) 0.6 ms^{-1}downward

D) 0.8 ms^{-1}downward

80. Q.Id: 157706

A 13 m ladder is placed against a smooth vertical wall with its lower end at a distance 5 m from the wall The minimum coefficient of friction between the ladder and the floor so that the ladder remains in equilibrium is nearly

A) 0.52

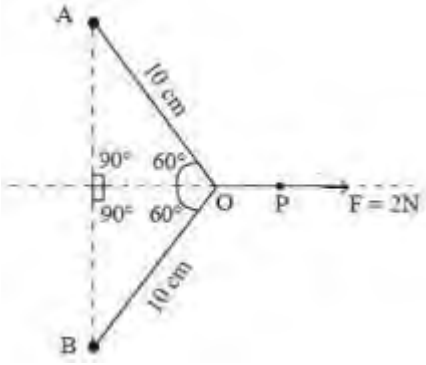
B) 0.72

C) 0.21

D) 0.36

81. Q.Id: 157705

Two point objects A and B each of mass 3 g and initially at rest are connected by mass less threads as shown in the figure. A constant force 2 N acts on the system at point P along OP. After the point O has moved a distance 20 cm in the direction of force, the two objects collide and stick together. The displacement and velocity of the centre of mass of the system immediately after collision are respectively



A) 20 cm,15 ms^{-1}

B) 10 cm,15 ms^{-1}

C) 15 cm,10 ms^{-1}

D) 15 cm,20 ms^{-1}

82. Q.Id: 157703

A stationary body explodes into four identical fragments such that three of them fly off mutually perpendicular to each other, each with a kinetic energy $\frac{E_0}{2}$. The total energy of explosion is

A) $6E_0$

B) $3E_0$

C) $\frac{3E_0}{2}$

D) $\frac{2E_0}{3}$

83. Q.Id: 157702

A soccer ball is travelling at a velocity $20 ms^{-1}$ due south. At the end of its travel. it moves with a velocity $2 ms^{-1}$ due south. If the change in the linear momentum of the ball is $18\ kgms^{-1}$ due north. then the mass of the ball is

A) 3.0 kg

B) 0.81 kg

C) 1.0 kg

D) 0.5 kg

84. Q.Id: 157701

For a truck with 14 tyres, only rear 8 wheels are power driven and can produce acceleration. These 8 wheels support half the entire load. If the coefficient of friction between road and each tyre is 0.6. the maximum attainable acceleration by this truck would be (Acceleration due to gravity $10\ ms^{-2}$)

A) $6\ ms^{-1}$

B) $3\ ms^{-1}$

C) $10\ ms^{-1}$

D) $24\ ms^{-2}$

85. Q.Id: 157700

Three particles A. B and C simultaneously start from the origin. Particle A moves with a velocity 'a' along X-axis, particle B moves with a velocity 'b' along Y-axis and particle C moves with a velocity 'c' in the X-Y plane along the straight line x = y. The magnitude of 'c' so that all the three particles always remain collinear is

A) a + b

B) $\sqrt{ab}$

C) $\frac{ab}{a+b}$

D) $\frac{\sqrt{2}ab}{a+b}$

86. Q.Id: 157699

The speed of a projectile at its maximum height is $\frac{\sqrt{3}}{2}$ times its initial speed. If the range of a projectile is 'p' times the maximum height attained by it, then the value of 'p' is

A) $2\sqrt{3}$ **B)** $3\sqrt{2}$

C) $\sqrt{3}$ **D)** $4\sqrt{3}$

87. Q.Id: 157698

At time t = 0, a body is dropped freely from the top of a tall building and at a later time t = T, another body is thrown vertically downwards with a velocity 'v' from the top of the same building. The time at which the two bodies will meet is

A) $\frac{T}{2}\left[\frac{2v-gT}{v-gT}\right]$ **B)** $\frac{T}{3}\left[\frac{3v-gT}{2v-gT}\right]$

C) $\frac{T}{2}\left[\frac{v-gT}{2v-gT}\right]$ **D)** $\frac{T}{3}\left[\frac{2v-gT}{3v-gT}\right]$

88. Q.Id: 157697

If R. L. C. F. v. q. I and t represent resistance, inductance, capacitance, force, velocity, electric charge, electric current and time respectively, then which of the following will have same dimensions?

(a) I^2R (b) $\frac{L}{Rt}$ (c) $\frac{q^2}{RC^2}$ (d) $\frac{Fv}{t}$

A) a & b **B)** a & c

C) b & d **D)** a & d

89. Q.Id: 157651

Study the following statements

I) Programmed death of cells is called apoptosis

II) p is called guardian angel of cell's genome

III) Transgenic cow Rosie produced milk containing α-l antitrypsin

IV) Nitrosamines are non carcinogenic

Among the above. the incorrect statements are

A) I,II **B)** I,II,III

C) III,IV **D)** II,III,IV

90. Q.Id: 157650

Match the following

List1	List2
A. Carcinoma	I. Cancer of connective tissue
B. Sarcoma	II. Cancer of muscular tissue
C. Leukemia	III. Cancer of lymphatic system
D. Lymphoma	IV. Cancer of epithelial tissues
E. .	V. Cancer of bone marrow

A) A->iv, B->i, C->ii, D->iii

B) A->iv, B->i, C->v, D->iii

C) A->iv, B->ii, C->v, D->iii

D) A->iii, B->v, C->i, D->iv

91. Q.Id: 157648

Glue prepared and used by the worker bees to seal the cracks in honey combs

A) Chrysalis

B) Propolis

C) Bee Wax

D) Bee Venom

92. Q.Id: 157647

Assertion (A): long neck for Giraffes is due to directional selection

Reason (R) : It works constantly removing the individuals from one end and constantly shifting the average value to the other end.

A) Both (A) and (R) are correct and (R) is the correct explanation of (A)

B) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

C) (A) is Correct but (R) is not correct

D) (A) is not Correct but (R) is correct

93. Q.Id: 157646

Which one of the following theories contradicts Lamarack's theory?

A) Theory of Natural Selection

B) Germplasm theory

C) Mutation theory

D) Theory of biogenesis

94. Q.Id: 157645

Study the following statements

I) Karyotype of Klinefelter's syndrome is AA+ XO

II) Turner's syndrome is an example for trisomy

III) AA + XX +21^{st} chromosome is the karyotype of Down's syndrome

IV) Individual with Klinefelter's syndrome is Barr body positive

Among the above correct statements are

A) I,II

B) II,III

C) III,IV

D) I,IV

95. Q.Id: 157643

Assertion (A): Persons with O group of blood are called universal donors

Reason (R): Their blood plasma contains both antigen A and antigen B

A) Both (A) and (R) are correct and (R) is the correct explanation of (A)

B) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

C) (A) is correct but (R) is not correct

D) (A) is not correct but (R) is correct

96. Q.Id: 157642

A colour blind man married a woman who is a daughter of a colour blind father and normal homozygous mother. What are the chances of their daughters to become colour blind?

A) 25%

B) 75%

C) 100%

D) 50%

97. Q.Id: 157641

Pick up the mismatched pair

A) Gonarrhoea - Neisseria

B) Syphilis - Treponema

C) AIDS - HIV

D) Cervix cancer - Trichomonas

98. Q.Id: 157640

Study the following

S.NO	Foetal membranes in man	Formed by	Function
I	Yolk sac	Splanchnopleure	Not useful for nutrition
II	Allantois	Splanchnopleure	Store nitrogenous wastes
III	Amnion	Somatopleure	Form placenta
IV	Chorin	Splanchnopleure	Prevent dessication of embryo

Among the above,the correct combinations are

A) I,II **B)** II,III

C) III,IV **D)** I,IV

99. Q.Id: 157639

Acidity of urethra of man is neutralised by the secretion of

A) Prostate gland **B)** Cowper's gland

C) Seminal vesicles **D)** Skene glands

100. Q.Id: 157638

Study the following statements

I) The largest endocrine gland of man secretes adrenalin

II) T_H **cells are involved in humoral and cell mediated immunity**

III) Natural Killer cells are a type of lymphocytes

IV) T_C **cells are involved in humoral immunity**

Pick up the correct statements.

A) I,II **B)** II,III

C) III,IV **D)** I,IV

101. Q.Id: 157637

Match the following

List1	List2
A. Diabetes insipidus	I. Cretinism
B. Diabetes mellitus	II. Bronze coloured scars on skin
C. Addison's disease	III. Insulin
D. Cushings disease	IV. Buffalo hump
E. .	V. Vasopressin

A) A->v, B->iii, C->ii, D->iv

B) A->v, B->iii, C->i, D->ii

C) A->v, B->ii, C->iii, D->iv

D) A->iv, B->ii, C->iii, D->i

102. Q.Id: 157636

Observe the following diagram of V.S. of eye and identify the parts I, II, III and IV

A) I II III IV
Blind spot Fovea Choroid Cornea

B) I II III IV
Fovea Blind spot Choroid Cornea

C) I II III IV
Yellow spot Fovea Conjunctiva Choroid

D) I II III IV
Blind spot Yellow spot Pupil Cornea

103. Q.Id: 157635

Fibrous membrane in the middle of a sarcomere is

A) A

B) I

C) Z

D) M

104. Q.Id: 157634

Study the following statements

I) In the wall of veins of man elastic laminae are present on either side of tunica media

II) Angina pectoris is due to insufficient supply of blood to heart muscles

III) Juxta Glomerular cells of kidney secrete the enzyme rennin

IV) Cellophane membrane of dialyser is impermeable to micro molecules like creatinine

Identify the incorrect statements among the above

A) I,II,II

B) I,II

C) I,III,IV

D) II,III

105. Q.Id: 157633

Study the following table

S. No.	Group	Number of chambers in heart	Type of circulation	Oxygenation of blood occurs in
I	Pisces	2	Single	Gills
II	Amphibia	3	Single	Skin, buccal cavity, lungs
III	Reptilia	3	Double	Lungs, skin
IV	Mammalia	4	Double	Lungs

Pick up the correct combinations from the above

A) I,IV

B) I,II

C) II,III

D) III,IV

106. Q.Id: 157632

Assertion (A): Glomerular filtrate becomes hypertonic in distal convoluted tubule of the nephron

Reason (R) : In distal convoluted tubule obligatory reabsorption of water and sodium (Na+) takes place

A) Both (A) and (R) are correct and (R) is the correct explanation of (A)

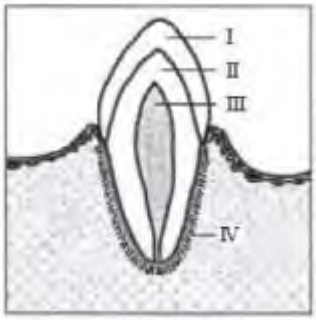
B) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

C) (A) is correct but (R) is not correct

D) (A) is not correct bur (R) is correct

107. Q.Id: 157622

Study the following diagram of V.S. of tooth and identify the parts I, II, III and IV



A) I II III IV
Dentine Enamel Pulp cavity
Periodontal membrane

B) I II III IV
Enamel Dentine Pulp cavity
Periodontal membrane

C) I II III IV
Periodontal membrane Dentine
Pulp cavity Enamel

D) I II III IV
Enamel Periodontal membrane
Dentine Theca

108. Q.Id: 157619

The following are the parts of human respiratory system
I) Glottis II) Trachea
III) External nostrils IV) Larynx
V) Nasal chambers VI) Bronchi
VII) Alveolar ducts VIII) Bronchioles
arrange in series from exterior to interior

A) A) III,V,I,IV,VI,II,VIII,VII

B) B) VII,VIII,VI,II,IV,I,V,III

C) C) V,I,IV,II,VI,VIII,VII,III

D) D) III,V,I,IV,II,VI,VIII,VII

109. Q.Id: 157616

Left side shift of oxygen-haemoglobin dissociation curve occurs during

A) Low pH. low CO_2, low temperature

B) High pH, low CO_2, low temperature

C) High pH. high CO_2, low temperature

D) Low pH. high CO_2, high temperature

110. Q.Id: 157614

If 4 individuals are died and 8 individuals are born in a laboratory population of 40 fruit flies during time interval of 7 days, calculate the intrinsic rate of natural increase of fruit fly population per week

A) 0.03

B) 0.3

C) 0.01

D) 0.1

111. Q.Id: 157613

Study the following statements

I) Camels are partial regulators or partial conformers

II) In limnetic zone of a lake, decomposers are almost absent

III) Ten percent law for the transfer of energy from one trophic level to the next was proposed by Elton

IV) The natural reservoir of phosphorus is sea

V) In case of parasitic food chain. the pyramid of number is inverted

Among the above the incorrect statements are

A) III,V

B) II,III

C) III,IV

D) IV,V

112. Q.Id: 157611

Match the following

List1	List2
A. Metabolic rate	I. Jordon's rule
B. Body size	II. Allen's rule
C. Size of body parts	III. 10 percent law
D. Energy flow	IV. Van't Hoff's rule
E. .	V. Bergman's rule

A) A->ii, B->i, C->iv, D->iii

B) A->iv, B->v, C->ii, D->iii

C) A->iii, B->ii, C->v, D->iv

D) A->iv, B->v, C->ii, D->i

113. Q.Id: 157606

Assertion (A): Daphnia exhibits cyclomorphosis

Reason (R): It is an adaptation for Daphnia to lead benthic life

A) Both (A) and (R) are correct and (R) is the correct explanation of (A)

B) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

C) (A) is correct but (R) is not correct

D) (A) is not correct but (R) is correct

114. Q.Id: 157605

Oriented locomotor movement of an organism towards or away from light source is called

A) Photokinesis

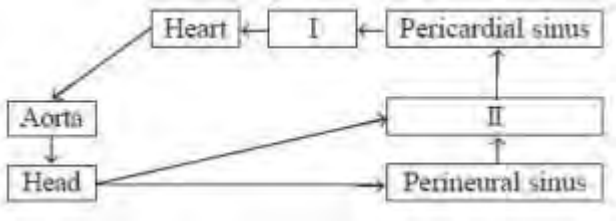
B) Phototropism

C) Phototaxis

D) Photoperiodism

115. Q.Id: 157604

Study the following regarding blood circulation in cockroach and identify I and II



A) I - Ostia; II - Perivisceral sinus

B) I - Haemocoel; II - Ostia

C) I - Perivisceral sinus; II - Ostia

D) I - Atria; II - Perivisceral sinus

116. Q.Id: 157603

These cells of corpora adiposa of cockroach store food materials

A) Mycetocytes

B) Trophocytes

C) Oenocytes

D) Urate cells

117. Q.Id: 157602

Read the following statements and pick up the correct one

A) Rhabditiform larva of Ascaris undergoes 4th moulting in alveoli of lungs of man

B) Inflammation of lymph glands due to Wuchereria is called lymphangitis

C) Cocaine is obtained by the acetylation of morphine

D) Excessive dosage of cocaine causes hallucinations

118. Q.Id: 157600

Match the following

List1	**List2**
A. Plasmodium malariae	I. Malignant tertian malaria
B. Plasmodium falciparum	II. Mild tertian malaria
C. Plasmodium vivax	III. Quartan malara
D. Plasimodiumovale	IV. Dum dum fever
E. .	V. Benign tertian malaria

A) A->iii, B->iv, C->v, D->ii

B) A->iv, B->i, C->v, D->ii

C) A->iii, B->i, C->v, D->ii

D) A->ii, B->v, C->i, D->iii

119. Q.Id: 157599

Assertion (A): Entamoeba histolytica is an obligate anaerobe

Reason (R): It lacks mitochondria

A) Both (A) and (R) are correct and (R) is the correct explanation of (A)

B) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

C) (A)is correct but (R) is not correct

D) (A) is not correct but (R) is correct

120. Q.Id: 157598

Tashkent ulcers are caused by

A) Leishmania tropica

B) Leishmania donovoni

C) Trypanosoma gambiense

D) Wuchereria bancrofti

121. Q.Id: 157597

Match the following

List1	List2
A. Isogamy	I. Plasmodium
B. Anisogamy	II. Vorticella
C. Hologamy	III. Astasia
D. Conjugation	IV. Monocystis
E. .	V. Trichonympha

A) A->iv, B->i, C->iii, D->ii

B) A->iv, B->i, C->v, D->ii

C) A->ii, B->iii, C->i, D->iv

D) A->i, B->ii, C->iv, D->v

122. Q.Id: 157596

Study the following table

S. No.	Group	Characters	Examples
I	Urochordata	Tunicin, ventral heart with reverse flow of blood, bisexual, tadpole larva	*Doliolum*
II	Cephalochordata	Solenocytes, ciliary feeding, presence of atrium, closed circulation without heart, gonads with gonoducts	*Branchiostoma*
III	Vertebrata	Paired fins/limbs, ventral heart, kidneys, hepatic portal system	*Bufo*

From the above, the correct combinations are

A) I,II

B) I,III

C) II,III

D) II only

123. Q.Id: 157595

Renal portal system is absent in

A) Fishes and Amphibians

B) Cyclostomes and Fishes

C) Reptiles and Birds

D) Cyclostomes and Mammals

124. Q.Id: 157594

Study the following statements

I) Digestion in sponges is extra cellular

II) Primary function of flame cells in flatworms is osmoregulation

III) Clitellum is absent in uni sexual annelids

IV) Dipleurula larva is considered as the ancestor of echinoderms

Among the above.correct statements are

A) I,II,III

B) I,III,IV

C) I,II,IV

D) II,III,IV

125. Q.Id: 157592

Match the following

List1	List2
A. Gorgonia	I. Crustacea
B. Trichiuris	II. Polyplacophora
C. Astacus	III. Actinozoa
D. Lepidopleurus	IV. Scaphopoda
E. .	V. Aphasmidia

A) A->iii, B->iv, C->i, D->ii

B) A->i, B->iii, C->ii, D->v

C) A->iii, B->v, C->i, D->ii

D) A->iv, B->iii, C->ii, D->i

126. Q.Id: 157590

Study the following statements

I) Stereocilia are long, non motile cilia like processes and are found in epididymis. internal ear etc.

II) Os cordis is a cartilage bone

III) Adjacent myocardial cells are joined by gap junctions

IV) Nissil bodies represent the smooth endoplasmic reticulum

Identify the correct statements.

A) I,IV

B) I,III

C) II,IV

D) III,IV

127. Q.Id: 157589

Assertion (A): Mammary glands are apocrine glands

Reason (R): In apocrine glands, the entire gland cell disintegrates to discharge the contents

A) Both (A) and (R) are correct and (R) is the correct explanation of (A)

B) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

C) (A) is correct but (R) is not correct

D) (A) is not correct but (R) is correct

128. Q.Id: 157587

Assertion (A): Species is an evolutionary unit

Reason (R): Individuals of a species have similar structure and functional characteristics

A) Both (A) and (R) are correct and (R) is the correct explanation of (A)

B) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

C) (A) is correct bur (R) is not correct

D) (A) is not correct but (R) is correct

129. Q.Id: 157583

Arrange the steps to be followed in breeding techniques

A.Creating the plants as pure lines

B.Progeny of the hybrids to be tested for the homozygosity for generations

C.Evaluation by growing in research field, farmer field and then for three growing seasons in several locations

D. Evaluation with best available local crop cultivars

E. Pollen grain of desirable male plant to be collected and placed on the stigma of the selected female plant

F. Effective exploitation of natural genes available in the population

A) F B A E D C

B) B A C D E F

C) F A E B C D

D) A F E B C D

130. Q.Id: 157582

Choose the correct statements

A. Early detection of pathogen presence can be done by PCR

B. Biochemical products produced by bacteria are inferior to products produced in transgenic plants

C. Validity of the GM Research will be controlled by Genetic Engineering Approval Committee

D. Use of bio resources by multinational companies with proper authorization is not possible

The correct answer is

A) B,C

B) A,B

C) B,D

D) A,C

131. Q.Id: 157581

Find the wrong statements

A. To cut DNA with restriction enzyme it needs to be pure form. free from RNA, Protein. Polysaccharides and lipids

B. RNA can be removed by protease enzyme

C. DNA separated as suspension can be removed by spooling

D. DNA cm be precipited by adding warm ethanol

A) A,B

B) C,D

C) A,C

D) B,D

132. Q.Id: 157580

Find out the series of genes in the transcription unit of the following statements

I. Located towards 3 end of the structural gene

II. Flanked by promoter and terminator

III. Located towards 3 end of the coding strand

A) Coding strand. Template strand, Structural gene

B) Promoter. Sructural gene. Terminator

C) Terminator, Coding strand, Structural gene

D) Terminator, Structural gene, Promoter

133. Q.Id: 157579

Assertion (A): During transcription both the strands of DNA are copied

Reason (R): If both strands act as template DNA would code for RNA molecule with different sequences

A) Both (A) and (R) are correct and (R) is the correct explanation of (A)

B) Both (A and (R) are correct but (R) is not the correct explanation of (A)

C) (A) Is correct but R is not correct

D) (A) Is not correct but R is correct

134. Q.Id: 157578

Choose the correct statement

A. DNA is chemically more reactive and structurally stable compared to RNA

B. Catalytic RNA is known as Ribozymes

C. DNA can directly code for the synthesis of protein, where as RNA dependent on DNA for protein synthesis

D. Presence of 5-methyl uracil in the DNA also confers stability

A) B,D

B) B,C

C) A,B

D) C,D

135. Q.Id: 157577

Choose the Wrong statement.

A.single gene product may produce more than one effect thus if relates to pleiotropy

B.Dominance is an autonomous feature of a gene or the product

C. The frequency of recombination between gene pairs on the same chromosome as a measure of distance between those genes

D. Breeder cannot select the mutations of the desirable types as it has less variability

The correct answer is

A) A,B

B) B,C

C) A,D

D) B,D

136. Q.Id: 157576

Assertion (A): DNA from Bacteriophage head passes through tail core through plasma membrane and enters bacterial cell

Reason (R): Plasma membrane of the host cell gets dissolved due to lysozyme and releases the new virions

A) Both (A) and (R) are correct and (R) is the correct explanation of (A)

B) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

C) (A) is correct but (R) is not correct

D) (A) is not correct but (R) is correct

137. Q.Id: 157575

Fill up blanks with suitable words

In a graph of length of organ against time, which is a typical_____and expressed as_____However, in a graph of growth against time_____ will appear with expression of _____Where_____is base of natural logorithm and also 'r' as_____,

A B C D E F

Sigmoid $W_1 = W_{0^{ert}}$ $L_t = L_0 + rt$ **Linear e Efficiency index**

Correct sequence is

A) D,C,A,B,E,F

B) A,B,C,D,E,F

C) C,B,A,D,F,E

D) A,B,E,F,C,D

138. Q.Id: 157566

Identify the wrong statements in the following

A. Winter varieties when planted in spring normally comes to flower before growing A season

B. In short day plants above critical photoperiod flowering will be initiated

C. Kinetin has specific effect on cytokinesis which is a modified purine

D. Auxins are used as herbicides

The correct answer is

A) A,B

B) B,C

C) A,C

D) A,D

139. Q.Id: 157561

Choose the correct statement

A. Reduced ubiquinone is oxidized with transfer of electrons to cytochrome C via complex III

B. Intermediates in the respiratory pathway are not utilized for synthesis of other compounds

C. Fatty acid will broken down to acetyl CoA before entering the respiratory pathway

D.The energy released by oxidation in respiration is not used directly

A) A,B,C

B) B,C,D

C) A,C,D

D) A,B,C,D

140. Q.Id: 157559

Choose the correct statement

A. Difference between C_4 and CAM pathway is the CO_2 fixation and Calvin cycle are separated in space and time respectively

B. Aldolase combines two 3-carbon compounds as well as one 4-carbon and one 7-carbon compound

C. Based on the labelled carbon studies CO_2 fixation products were identified

D. Stroma lamella and Grana lamella are identical in the distribution of the photosystems

A) A,C

B) B,C

C) A,D

D) B,D

141. Q.Id: 157555

First reaction in electron transport of Photosynthesis

A) Photosystem II Chl a absorb light of 680 nm and transport e^- to cytochrome

B) Photosystem I Chl a absorb light of 700 nm and transport e^- to pheophytin

C) Photosystem II Chl a absorb light of 680 nm and excite e^- from atomic nucleus to farther orbit

D) Photo system I Chl a absorb light of 700 nm and transport e^- to cytochrome

142. Q.Id: 157552

Arrange the sequences in enzyme action

A. Product releases and free enzyme again binds to another substrate molecule

B. Enzyme to alter its shape

C. Substrate binds to active site of the enzyme

D. Fits in to the active site

E. Formation of enzyme product complex

The correct answer is

A) A,C,D,B,E

B) A,B,D,C,E

C) C,B,D,E,A

D) C,D,B,E,A

143. Q.Id: 157550

Choose the correct statements

A. Porins allow molecules of small proteins present in membrane of Mitochondria, Chloroplast and bacteria

B. When a living cell kept in hypertonic solution, the water potential is equal to solute potential

C. Carrier proteins will allow all substances across the membrane where as pumps transport large molecules in a passive method

D. Bulk flow can be achieved through diffusion

A) A,B

B) C,D

C) A,D

D) B,C

144. Q.Id: 157542

Plants which show given characters respectively

A.Long petiolated leaves. Rooted hydrophytewith floating leaves

B.Succulent roots, water in the form of mucilage

C. Submerged and not rooted hydrophyte

D. Grows in saline soils, respiratory roots

A) Nymphaea, salvinia, typha, vanda

B) Victoria regia, Asparagus,utricularia,Rhizophora

C) Sagittaria,pistia,hydrilla,vallisneria

D) Victoria regia,Asparagus, Salvinia, Rhizophora

145. Q.Id: 157538

Epidermal hairs of shoot system

I. Unicellular or Multicellular

II. Multicellular, branched or un branched

III. Secretary in function

IV. Absorbs water

V. Prevent transpiratory water loss

A) II,III,V

B) I,III,V

C) II,III,IV

D) I,IV,V

146. Q.Id: 157536

Sclerenchyma gives mechanical support in

A) Seed coat of Legume. Fruit pulp of Guava. Leaf of Tea

B) Seed coat of Sapota. Leaf of Guava. Pulp of Legume

C) Seed coat of Guava. Leaf of Legumes Fruit pulp of Tea

D) Leaf of Pear. Seed coat of guava. Pulp of Legumes

147. Q.Id: 157534

Assertion (A): Chromosomes are inactive and not transcribed to messenger RNA in phase of apparent division

Reason (R) : Cells remains metabolically active but no longer divide in quiescent stage

A) Both (A) and (Rare true and (R) is the corect explanation of (A)

B) Both (A) and (R) are correct but (R) is not the correct explanation of

C) (A) is true but (R) is false

D) (A) is false but (R) is true

148. Q.Id: 157532

Fill up the blanks with suitable words

In Meiosis, chromosomes start____which is called_____thus a ______of chromatids. Later the nonsister chromatids will undergo_____leading to genetic material

A B C D E

Pairing Synapsis Exchange Tetrad Crossing over

A) A → C → D → B → E

B) A → B → D → E → C

C) B → A → C → D → E

D) A → B → C → D → E

149. Q.Id: 157528

Find the wrong statement

A. Polymers of polysaccharides, fats and proteins are synthesised from monomers by ionic bonding

B. Molecules with polar headsand hydrophobic tails are present in cell membrane

C. Left end of protein chain is N-terminal end

D. Right and Left handed helices are observed in protein

A) A,B

B) B,C

C) C,D

D) A,D

150. Q.Id: 157526

Choose the correct statements

A . Acid soluble fractions have more than one thousand daltons

B. Common acid used in the living cell compound analysis is Hydrochloric acid

C. Number of carbons in Arachidonic acid is 20

D. Serine is the hydoxy methyl group amino acid

A) A,B

B) B,C

C) C,D

D) A,D

151. Q.Id: 157524

Assertion (A): Cis and Trans faces of the golgi associated with glyco proteins and glyco lipids

Reason (R): Golgi apparaus is in close association with rough Endoplasmic reticulum

A) Both (A) and (R) are true and (R) is the correct explanation of (A)

B) Both (A) and (R) are true but (R) is not the correct explanation of (A)

C) (A) is true but (R) is false

D) (A) is false but (R) is true

152. Q.Id: 157522

Choose the wrong statement :

A. In hydrophilly the pollen grains are covered by mucilagenous layer and in water hyaciurth pollination takes place by insects

B. Nector and pollen are the rewards for animals in pollination but not in Yucca and Amorphophallus

C. Autogamy can be prevented by herkogamy and cliestogamous flowers

D. Wind pollinated flowers will have multi ovule condition for more seed production.

A) A,B

B) B,C

C) A,D

D) C,D

153. Q.Id: 157520

Assertion (A): Unlike coconut, groundnut consume endosperm completely during embryo. development

Reason (R): Though the embryogeny is similar in groundnut and coconut, perispem is seen in coconut

A) Both (A) and (R) are true d (R) is the correct explanation of (A)

B) Both (A) and (R) are true but (R) is not the correct explanation of (A)

C) (A) is true but (R) is false

D) (A) is false but (R) is true

154. Q.Id: 157518

Fill up the blanks with suitable words

The ability of the pistil to recognise pollen is dependent on_____components and_____guide the entry ofpollentube. This study leads to help_____in getting_____even in

A. Chemicals

B. Plant breeders

C. hybrids

D. Incompatible pollination

E. Synergids

A) A,B,C,D,E

B) A,E,B,C,D

C) E,A,D,C,B

D) A,C,B,D,E

155. Q.Id: 157516

Choose the correct statement/s

A. In majority of algae formation of zygote occurs in female plant

B. Cladophora produces identical gamets

C. In Bryophytes and Pteridophytes the ratio of male gamets to female gamets will be several thousands

D. In Mangroves seeds germinate while in mother plant to increase environmental stress

A) A,B

B) A,B,C

C) B,C

D) A,B,C,D

156. Q.Id: 157511

Fill up the Blanks with suitable words The gametophytes in gymnosperms are _____but cycas shows _____because of presence of multiciliate male gamete. The retained multicellular female gametophyte is also called ____ In this thick cuticle and _____will be useful to reduce water loss.

A. Sunken stomata

B.Zooidogamy

C.Endosperm

D. Dependent

A) D,B,C,A

B) B,C,D,A

C) B,D,A,C

D) D,A,C,B

157. Q.Id: 157508

Match the following

List1	List2
A. Tracheophytic, Archegoniate, Embryophytic, Phanerogams	I. Angiosperms
B. Tracheophytic. Archegoniate, Embryophytic. Cryptogams	II. Gymnosperms
C. Atracheophytic. Archegoniate. Embryophytic. Cryptogams	III. Algae
D. Tracheophytic. Non-archegoniate, Embryophytic, Phanerogams	IV. Bryophytes
E. .	V. Pteridoplhytes

A) A->ii, B->v, C->iv, D->iii

B) A->i, B->iii, C->v, D->ii

C) A->ii, B->v, C->iv, D->i

D) A->ii, B->iv, C->iii, D->i

158. Q.Id: 157503

Match the following

List1	List2
A. Protostele	I. dissected siphonostele with leaf gap
B. Siphonostele	II. dissected siphonostele with over lapping leaf gaps
C. Dictyostele	III. Xylem surrounded by phloem
D. Solonostele	IV. Medullated protostele

A) A->i, B->ii, C->iii, D->iv

B) A->ii, B->i, C->iv, D->iii

C) A->iii, B->iv, C->ii, D->i

D) A->iii, B->ii, C->i, D->iv

159. Q.Id: 37085

Collenchyma differs from sclerenchyma in

A) having sclereids

B) having thick walls

C) having inside lumen

D) retaining protoplasm at maturity

160. Q.Id: 25981

The endosperm found in angiospermic seed is different from that of gymnosperms in the sense that, in the former

A) it is formed before fertilization while in the latter it is formed after fertilization.

B) it is formed after fertilization.

C) it is cellular while in the latter it is nuclear.

D) it is nutritive while in the latter it is protective.