1. A Body moves 6 *m* north. 8 *m* east and 10*m* vertically upwards, what is its resultant displacement from initial position

(1) $10\sqrt{2}m$ (2) $10m$

(3) $\frac{10}{\sqrt{2}}m$ (4) $10\times 2m$

2. At a certain distance from a point charge the electric field is $500\,V/m$ and the potential is $3000V$. What is this distance

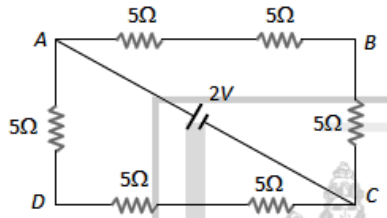
(1) $6\,m$

(2) $12\,m$

(3) $36\,m$

(4) $144\,m$

3. The potential difference between points A and B of adjoining figure is



(1) $\frac{2}{3}V$ (2) $\frac{8}{9}V$

(3) $\frac{4}{3}V$ (4) $2\,V$

4. The correct statement from the following is

(1) A body having zero velocity will not necessarily have zero acceleration

(2) A body having zero velocity will necessarily have zero acceleration

(3) A body having uniform speed can have only uniform acceleration

(4) A body having non-uniform velocity will have zero acceleration

5. Two racing cars of masses m_1 and m_2 are moving in circles of radii r_1 and r_2 respectively. Their speeds are such that each makes a complete circle in the same duration of time t. The ratio of the angular speed of the first to the second car is

(1) $m_1 : m_2$

(2) $r_1 : r_2$

(3) 1 : 1

(4) $m_1 r_1 : m_2 r_2$

6. **Assertion (A):** Fission reactions are exothermic

Reason (R): Total mass of fragments is lesser than the total mass of reactants.

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

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

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

(4) (A) is true but (R) is false.

7. A force $\boldsymbol{F}=(5\hat{\boldsymbol{i}}+3\hat{\boldsymbol{j}})$ *newton* is applied over a particle which displaces it from its origin to the point $\boldsymbol{r}=(2\hat{\boldsymbol{i}}-1\hat{\boldsymbol{j}})$ *metres*. The work done on the particle is

(1) – 7 *joules* (2) + 13 *joules*

(3) + 7 *joules* (4) + 11 *joules*

8. The gravitational force between two point masses m_1 and m_2 at separation *r* is given by $F=k\frac{m_1 m_2}{r^2}$

The constant *k*

(1) Depends on system of units only

(2) Depends on medium between masses only

(3) Depends on both (1) and (2)

(4) Is independent of both (1) and (2)

9. A body weight *W* newton at the surface of the earth. Its weight at a height equal to half the radius of the earth will be

(1) $\frac{W}{2}$ (2) $\frac{2W}{3}$

(3) $\frac{4W}{9}$ (4) $\frac{8W}{27}$

10. The ratio of the lengths of two wires *A* and *B* of same material is 1 : 2 and the ratio of their diameter is 2 : 1. They are stretched by the same force, then the ratio of increase in length will be

(1) 2 : 1 (2) 1 : 4

(3) 1 : 8 (4) 8 : 1

11. If 150 *J* of heat is added to a system and the work done by the system is 110 *J*, then change in internal energy will be

(1) 260 *J* (2) 150 *J*

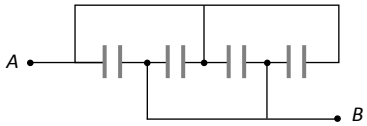
(3) 110 *J* (4) 40 *J*

12. In adiabatic expansion

(1) $\Delta U=0$ (2) $\Delta U=$ negative

(3) $\Delta U=$ positive (4) $\Delta W=$ zero

13. Four condensers are joined as shown in the adjoining figure. The capacity of each is $8\mu F$. The equivalent capacity between the points A and B will be



(1) $32\mu F$ (2) $2\mu F$

(3) $8\mu F$ (4) $16\mu F$

14. The frequency of a rod is 200 *Hz*. If the velocity of sound in air is $340\,ms^{-1}$, the wavelength of the sound produced is

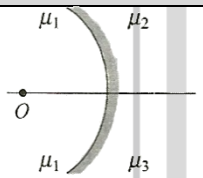
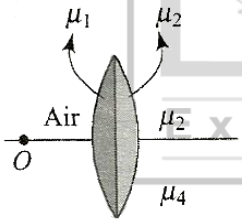
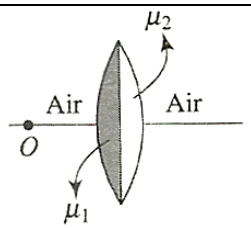
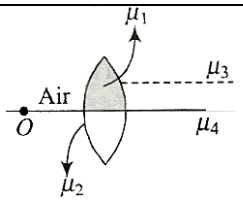
(1) 1.7 *cm*

(2) 6.8 *cm*

(3) 1.7 *m*

(4) 6.8 *m*

15. Match the entries of column I with entries of column II:

	Column- I		Column- II
(i)		(a)	Number of images formed is 1
(ii)		(b)	Number of images formed is 2
(iii)		(c)	Number of images formed is 3
(iv)		(d)	Number of images formed is 4

(1) i – a, ii – b, iii – a, iv – c

(2) i – b, ii – a, iii – c, iv – a

(3) i – d, ii – a, iii – c, iv – a

(4) i – b, ii – d, iii – c, iv – a

16. A charge *q* is placed at the centre of the line joining two equal charges *Q*. The system of the three charges will be in equilibrium, if q is equal to

(1) $-\frac{Q}{2}$ (2) $-\frac{Q}{4}$

(3) $+\frac{Q}{4}$ (4) $+\frac{Q}{2}$

17. If a wire of resistance *R* is melted and recasted to half of its length, then the new resistance of the wire will be

(1) *R*/4 (2) *R*/2

(3) *R* (4) 2*R*

18. A long solenoid carrying a current produces a magnetic field B along its axis. If the current is doubled and the number of turns per *cm* is halved, the new value of the magnetic field is

(1) *B* (2) 2 *B*

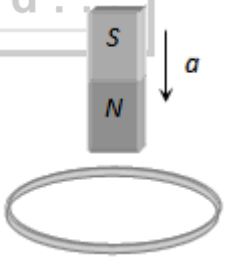
(3) 4 *B* (4) *B*/2

19. The field due to a small magnet at a distance *R* from the centre of the magnet is proportional to

(1) R^2 (2) R^3

(3) $1/R^2$ (4) $1/R^3$

20. A metallic ring is attached with the wall of a room. When the north pole of a magnet is brought near to it, the induced current in the ring will be (As it is seen from the magnet side)



(1) First clockwise then anticlockwise

(2) In clockwise direction

(3) In anticlockwise direction

(4) First anticlockwise then clockwise

21. When current in a coil changes to 2 *ampere* from 8 *ampere* in $3\times10^{-3}\,\text{sec}\,ond$, the e.m.f. induced in the coil is 2 *volt*. The self inductance of the coil in *millihenry* is

(1) 1 (2) 5

(3) 20 (4) 10

22. An object is placed $40cm$ from a concave mirror of focal length $20cm$. The image formed is

(1) Real, inverted and same in size
(2) Real, inverted and smaller
(3) Virtual, erect and larger
(4) Virtual, erect and smaller

23. A rectangular tank of depth 8 meter is full of water ($\mu = 4/3$), the bottom is seen at the depth

(1) 6 *m* (2) 8/3 *m*
(3) 8 *cm* (4) 10 *cm*

24. In a conductor 4 *coulombs* of charge flows for 2 *seconds*. The value of electric current will be

(1) 4 *volts* (2) 4 *amperes*
(3) 2 *amperes* (4) 2 *volts*

25. The radius of curvature for a convex lens is 40 *cm*, for each surface. Its refractive index is 1.5. The focal length will be

(1) 40 *cm* (2) 20 *cm*
(3) 80 *cm* (4) 30 *cm*

26. Wavefront means

(1) All particles in it have same phase
(2) All particles have opposite phase of vibrations
(3) Few particles are in same phase, rest are in opposite phase
(4) None of these

27. **Statement – I:** A hydrogen atom cannot absorb a photon whose energy is greater than 13.6 eV
Statement – II: The extra energy will manifest as KE of the electron.

(1) Statement I is incorrect but statement II is correct
(2) Both Statements I and II are correct
(3) Both Statements I and II are incorrect
(4) Statement I is correct but statement II is incorrect

28. Radius of ${}_2^4He$ nucleus is 3 Fermi. The radius of ${}_{82}^{206}Pb$ nucleus will be

(1) 5 Fermi (2) 6 Fermi
(3) 11.6 Fermi (4) 8 Fermi

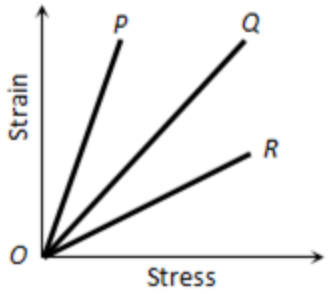
29. A 10 kg body hangs at rest from a rope wrapped around a cylinder 0.2 m in diameter. The torque applied about the horizontal axis of the cylinder is

(1) 98 N-m (2) 19.6 N-m
(3) 196 N-m (4) 9.8 N-m

30. A door 1.6 m wide requires a force of 1 N to be applied at the free end to open or close it. The force that is required at a point 0.4 m distant from the hinges for opening or closing the door is

(1) 1.2 N (2) 3.6 N
(3) 2.4 N (4) 4 N

31. The strain-stress curves of three wires of different materials are shown in the figure. *P*, *Q* and *R* are the elastic limits of the wires. The figure shows that



(1) Elasticity of wire *R* is maximum
(2) Elasticity of wire *Q* is maximum
(3) Tensile strength of *R* is maximum
(4) None of the above is true

32. A cricket ball of mass 250 *g* collides with a bat with velocity 10 *m*/*s* and returns with the same velocity within 0.01 second. The force acted on bat is

(1) 25 *N*
(2) 50 *N*
(3) 250 *N*
(4) 500 *N*

33. If the linear momentum is increased by 50%, the kinetic energy will increase by

(1) 50% (2) 100%
(3) 125% (4) 25%

34. If pressure at half the depth of a lake is equal to 2/3 pressure at the bottom of the lake then what is the depth of the lake

(1) 10 *m*
(2) 20 *m*
(3) 60 *m*
(4) 30 *m*

35. In an isothermal process the volume of an ideal gas is halved. One can say that

(1) Internal energy of the system decreases
(2) Work done by the gas is positive
(3) Work done by the gas is negative
(4) Internal energy of the system increases

36. The ratio of thermal conductivity of two rods of different material is 5 : 4. The two rods of same area of cross-section and same thermal resistance will have the lengths in the ratio

(1) 4 : 5 (2) 9 : 1

(3) 1 : 9 (4) 5 : 4

37. A particle is executing simple harmonic motion with a period of *T seconds* and amplitude *a metre*. The shortest time it takes to reach a point $\frac{a}{\sqrt{2}}m$ from its mean position in *seconds* is

(1) *T* (2) *T*/4

(3) *T*/8 (4) *T*/16

38. When air is replaced by a dielectric medium of constant k, the maximum force of attraction between two charges separated by a distance

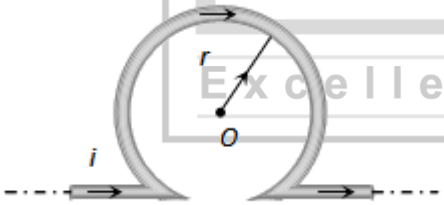
(1) Decreases k times

(2) Remains unchanged

(3) Increases k times

(4) Increases k^{-1} times

39. An infinitely long straight conductor is bent into the shape as shown in the figure. It carries a current of *i ampere* and the radius of the circular loop is *r metre*. Then the magnetic induction at its centre will be



(1) $\frac{\mu_0}{4\pi}\frac{2i}{r}(\pi+1)$ (2) $\frac{\mu_0}{4\pi}\frac{2i}{r}(\pi-1)$

(3) Zero (4) Infinite

40. In an ac circuit, *V* and *I* are given by

V = 100 sin (100 *t*) *volts*, $I = 100\sin\left(100t+\frac{\pi}{3}\right)mA$.

The power dissipated in circuit is

(1) 10^4 *watt* (2) 10 *watt*

(3) 2.5 *watt* (4) 5 *watt*

41. Si and Cu are cooled to a temperature of 300 K, then resistivity

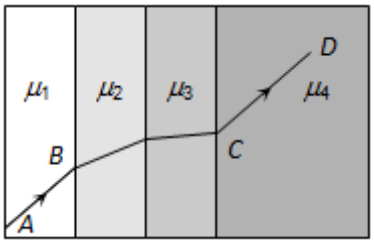
(1) For Si increases and for Cu decreases

(2) For Cu increases and for Si decreases

(3) Decreases for both Si and Cu

(4) Increases for both Si and Cu

42. A ray of light passes through four transparent media with refractive indices $\mu_1.\mu_2\mu_3$, and μ_4 as shown in the figure. The surfaces of all media are parallel. If the emergent ray *CD* is parallel to the incident ray *AB*, we must have



(1) $\mu_1 = \mu_2$ (2) $\mu_2 = \mu_3$

(3) $\mu_3 = \mu_4$ (4) $\mu_4 = \mu_1$

43. The ratio of intensities of two waves is 9 : 1. They are producing interference. The ratio of maximum and minimum intensities will be

(1) 10 : 8 (2) 9 : 1

(3) 4 : 1 (4) 2 : 1

44. The average value of electric energy density in an Electromagnetic Waves is (E_0 is peak value)

(1) $\frac{1}{2}\varepsilon_0 E_0^2$ (2) $\frac{E_0^2}{2\varepsilon_0}$

(3) $\varepsilon_0 E_0^2$ (4) $\frac{1}{4}\varepsilon_0 E_0^2$

45. Which of the following statements is not true for an n-type semiconductor?

(a) The donor level lies closely below the bottom of the conduction band.

(b) The donor level lies closely above the top of the valence band

(c) The donor level lies at the halfway mark of the forbidden energy gap

(1) Only a is correct

(2) a and c are correct

(3) b, c, are correct

(4) None

46. The gas (es) which turn lime water milky is (are):

(1) CO_2 (2) SO_2

(3) NO_2 (4) Both (1) and (2)

47. A pale green crystalline inorganic salt (A) dissolves freely in water. It gives a brown precipitate on addition of aqueous NaOH. The solution of (A) also gives a black precipitate on bubbling H_2S in alkaline medium. An aqueous solution of (A) decolourizes the pink colour of the permanganate solution. The salt solution contain metal of:

(1) Copper (2) Aluminium

(3) Lead (4) Iron

48. Pt(IV) chloride forms several octahedral complexes with ammonia. Which of the following will not give test of chloride ions with silver nitrate at 25°C?

(1) $PtCl_4.6NH_3$

(2) $PtCl_4.5NH_3$

(3) $PtCl_2.2NH_3$

(4) $PtCl_4.2NH_3$

49. Ni^{+2} gives dark red ppt. with dmg in basic medium. Which of the following option is incorrect regarding ppt?

(1) Total number of chelate ring = 4

(2) Hybridisation is dsp^2

(3) It has symmetrical hydrogen bond

(4) It show's G.I. as well as O.I.

50. If molarity of a dilute solution is doubled, the value of molal elevation constant (K_b) will be?

(1) Halved (2) Tripled

(3) Unchanged (4) Doubled

51. K_H value for some gases at the same temperature T are given:

Gas	K_H (in kilobar)
He	114.97
CO_2	1.67
N_2	76.48
CH_4	0.413

Where K_H is Henry's law constant in water. The order of their solubility in water is:

(1) $CH_4 < CO_2 < N_2 < He$

(2) $CO_2 < He < N_2 < CH_4$

(3) $CH_4 < N_2 < CO_2 < He$

(4) $He < N_2 < CO_2 < CH_4$

52. Match List-I with List-II.

List-I (Reaction of carbonyl compound with)		List-II (Product formed)	
(a)	HCN	(i)	Ketal
(b)	Alcohol	(ii)	Hydrazine
(c)	$R – NH_2$	(iii)	Cyanohydrin
(d)	$NH_2 – NH_2$	(iv)	Schiff's base

(1) (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

(2) (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)

(3) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

(4) (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)

53. Before adding the reagent of group III, if some drop of dil. HNO_3 does not added then?

(1) $Fe(OH)_3$ ppt will form easily

(2) Sn^{+2} will not oxidise into Sn^{+4}.

(3) Fe^{+2} will not oxidise into Fe^{+3}.

(4) $Al(OH)_3$ ppt will form

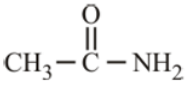
54. $CH_3 - CN \xrightarrow[\Delta]{H_2O/H^+} A \xrightarrow[\Lambda]{NH_3} B \xrightarrow{LiAlH_4} C$

compound 'C' is:

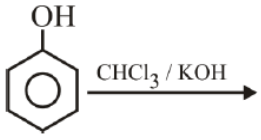
(1) $CH_3 – NH_2$

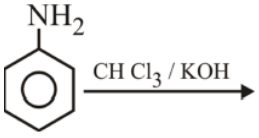
(2) $CH_3 – NH – CH_3$

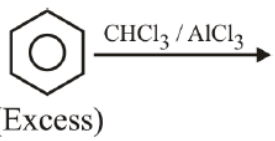
(3) $CH_3 – CH_2 – NH_2$

(4) 

55. Which of the following reaction involve formation of dichlorocarbene as an electrophile.

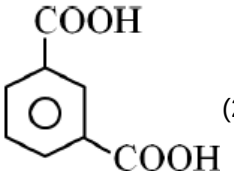
(1) 

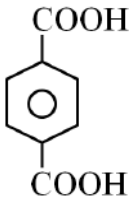
(2) 

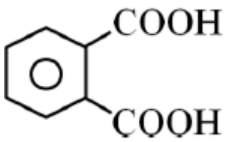
(3) 

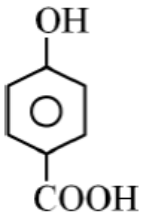
(4) Both (1) and (2)

56. Which of the following acid will form anhydride on heating and Phthalimide on strong heating with Ammonia.

(1) 

(2) 

(3) 

(4) 

57. When substance is immiscible with water and steam volatile, then which purification method is used?

(1) Fractional distillation

(2) Vacuum distillation

(3) Steam distillation

(4) Simple distillation

58. **Statement-I:** The decrease in the vapour pressure of solvent depends on the quantity of non-volatile solute present in the solution.

Statement-II: Relative lowering of vapour pressure is equal to the mole fraction of the solvent.

(1) Both Statement I and Statement II are incorrect.

(2) Statement I is correct but Statement II is incorrect.

(3) Statement I is incorrect but Statement II is correct.

(4) Both Statement I and Statement II are correct.

59. Identify correct code.

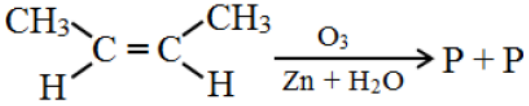
Column-I (Reactions)		Column-II (Products)	
(a)	$CH_3CH_2CH_2Cl + H_2 \xrightarrow{Zn/H^{\oplus}}$	(p)	$CH_3 - CH_3$
(b)	$CH_3Br \xrightarrow[dry\ ether]{Na}$	(q)	$(CH_3)_3\ C - OH$
(c)	$CH_4 + O_2 \xrightarrow[\Delta]{Mo_2O_3}$	(r)	$CH_3–CH_2 – CH_3$
(d)	$(CH_3)_3CH \xrightarrow{KMnO_4}$	(s)	$HCHO + H_2O$

(1) a→r, b→q, c→p, d→s

(2) a→q, b→p, c→r, d→s

(3) a→p, b→q, c→s, d→r

(4) a→r, b→p, c→s, d→q

60. 

the number of oxygen per molecule in product P.

(1) 2 (2) 1

(3) 3 (4) 4

61. How many activating group are present in:

$–NH_2$, –NHR, $–NO_2$, –CN, –CHO, –COOH, $–OCH_3$, $–CH_3$

(1) 3 (2) 4

(3) 5 (4) 6

62. The minimum number of carbon atoms in an alkane having four primary carbon atoms are:

(1) 4 (2) 8

(3) 5 (4) 6

63. 0.1 M RNH_3Cl solution is 1% hydrolysed. If conc. of RNH_3Cl solution is changed to 0.4 M, new % hydrolysis is would be:

(1) 1% (2) 2%

(3) 0.5% (4) 0.2%

64. Consider the following statements:

(A) NF_3 molecule has a trigonal planar structure.

(B) Bond length of N_2 is shorter than O_2.

(C) Isoelectronic molecules have identical bond order.

(D) Dipole moment of H_2S is higher than that of water molecule.

Choose the correct answer from the option below:

(1) (A) and (D) are correct.

(2) (C) and (D) are correct.

(3) (A) and (B) are correct.

(4) (B) and (C) correct.

65. The value of enthalpy change (ΔH) for the reaction $C_2H_5OH_{(l)} + 3O_{2(g)} \rightarrow 2CO_{2(g)} + 3H_2O_{(l)}$

At 27°C is –1366.5 kJ mol^{-1}. The value of internal energy change for the above reaction at this temperature will be:

(1) –1371.5 kJ (2) –1369.0 kJ

(3) –1364.0 kJ (4) –1361.5 kJ

66. 1.08g Ag metal was deposited when 1 ampere current for 15 minute was passed through $AgNO_3$ (aq). The electrochemical equivalent of Ag is-

(1) 1.2×10^{-5} g/C

(2) 1.2×10^{-2} g/C

(3) 1.2×10^{-3} g/C

(4) 1.2×10^{-4} g/C

67. For which type of cell, slat bridge is not required?

(1) Both anode and cathode are placed in same electrolyte solution.

(2) Both anode and cathode are placed in different electrolyte solution

(3) In Daniell cell

(4) When same electrodes dip in the different type of electrolyte.

68. The incorrect statement from the following is:

(1) Most of the lanthanoids are coloured due to f – f transition

(2) Lanthanoids are good conductor of heat & electricity

(3) Oxides of Lanthanoids are more basic than oxide of Actinoids

(4) Ce^{+4} act as a good Analytical agent in a Laboratory

69. Graph plotted between $[A]_t$ vs t for zero order reaction is straight lime with intercept 0.003 and slope is –0.48. Then what will be value of rate constant:

(1) 3×10^{-3} (2) 0.48

(3) 0.24 (4) e^{-1}

70. **Assertion:** Both 12g of carbon & 27g of aluminium will have 6.02×10^{23} atoms.

Reason: Gram atomic mass of an element contains Avogadro's number of atoms.

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

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

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

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

71. The oxidation states of two S-atoms in $S_2O_3^{2-}$ are:

(1) –2, –2 (2) +6, +6

(3) –2, +6 (4) +2, +4

72. The conversion of X → Y follows second order kinetics. If concentration of X is increased to three times how will it affect the rate of formation of Y?

(1) The rate will increase 9 times

(2) The rate will increase 3 times

(3) The rate will decrease 6 times

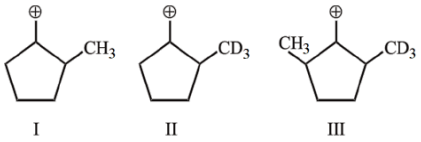
(4) The rate will decrease 3 times

73. Choose correct order of trans – effect?

(1) $C_2H_4 > Cl$ (2) $Cl < NH_3$

(3) $CO < NH_3$ (4) $NO_2 < F$

74. Correct order of stability of carbocation:



I II III

(1) I > II > III (2) III > II > I

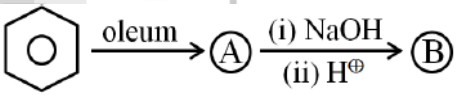
(3) III > I > II (4) I > III > II

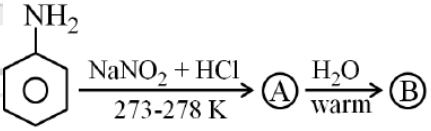
75. Iodine can be obtained from NaI solution by the action of:

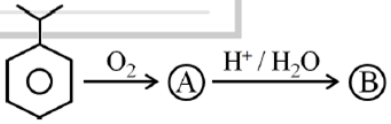
(1) Cl_2 (2) Br_2

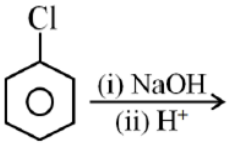
(3) Soluble Cl^- (4) Both (1) and (2)

76. Which of the following reaction sequence is incorrect method to prepare phenol?

(1) 

(2) 

(3) 

(4) 

77. An organic compound 'X' having molecular formula $C_5H_{10}O$ yields hydrazine and gives positive response to iodoform test and negative response to tollens' test 'X' is

(1) n – Pentyl alcohol (2) Pentanal

(3) Pentan – 2-one (4) Pentan – 3-one

78. On reaction of 1°amine with chloroform in alkaline the foul/bad smelling compound formed is:

(1) $:CCl_2$ (2) R – N ≡ C

(3) R –C ≡ N (4) R –N = O

79. What is the value of energy barrier associated with around a C –C single bond in alkane?

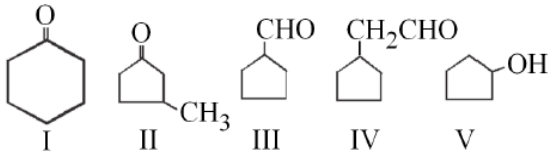
(1) 1 – 40 K J mol^{-1}

(2) 1 – 20 K J mol^{-1}

(3) 1- 20 K cal mol^{-1}

(4) 1-40 K cal mol^{-1}

80. Which of the following are isomers –



I II III IV V

(1) I and II Only

(2) III and IV Only

(3) I, II and III

(4) All

81. Calculate the mass of $CaCO_3$ decomposed such that following equilibrium will establish in 6.5 L container

$CaCO_3(s) \rightleftharpoons CaO(s) + CO_2(g)$; $K_C = 0.05$ mol L^{-1}

(1) 32.5 g (2) 24.6 g

(3) 40.9 g (4) 8 g

82. The minimum number of moles of $O_2(g)$ consumed per mole of reactant is for the reaction:

(1) $4Fe(s) + 3O_2(g) \rightarrow 2Fe_2O_3(s)$

(2) $C_3H_8(g) + 5O_2 \rightarrow 3CO_2(g) + 4H_2O(l)$

(3) $2Mg(s) + O_2(s) \rightarrow 2MgO(s)$

(4) $P_4(s) + 5O_2(g) \rightarrow P_4O_{10}(s)$

83. Under certain conditions velocity of H – atom is 10^3 ms^{-1}. Its de – Broglie wavelength is:

(1) 398 Å (2) 3.98 Å

(3) 10^3 Å (4) 6.6×10^{-27} Å

84. Select incorrect order.

(1) σ: Na < K < Rb

(2) Z_{eff}: Li > Na > K > Rb

(3) Ionic radius: $O^{-2} > F^- > Na^+ > Mg^{+2}$

(4) atomic radius: Li < Na < K < Rb

85. Match correctly Column –I with Column –II:

Column-I		Column-II	
(a)	O^{2-}	(p)	Both reductant and oxidant
(b)	He	(q)	Only reducing agent
(c)	ClO_4^-	(r)	Neither oxidant nor reductant
(d)	Cl_2	(s)	Only oxidising agent

(1) a–p, b–q, c–r, d–s

(2) a–q, b–r, c–s, d–p

(3) a–q, b–s, c–p, d–r

(4) a–s, b–p, c–q, d–r

86. One gram sample of NH_4NO_3 is decomposed in a bomb calorimeter. The temperature of the calorimeter increase by 6.12 K. The heat capacity of system is 1.23 kj/g/deg. What is molar heat of decomposition of NH_4NO_3 at constant volume.

(1) –7.53 kJ/ mol

(2) –398.1 kJ/ mol

(3) –16.1 kJ/ mol

(4) –602 kJ/ mol

87. The resistance of 0.5 M solution of an electrolyte in a cell is found to be 500 Ω. If the electrodes in the cell are 2.2 cm apart and area of cross section is 4.4 cm^2, then Λ_m of solution is

(1) 0.2 Ω^{-1} cm^2 mol^{-1}

(2) 0.02 Ω^{-1} cm^2 mol^{-1}

(3) 0.002 Ω^{-1} cm^2 mol^{-1}

(4) 2 Ω^{-1} cm^2 mol^{-1}

88. Which of the following block elements shows similar property, horizontally as well as vertically?

(1) f-Block (2) d-Block

(3) s-Block (4) p-Block

89. Incorrect order of oxidising power is:

(1) $CrO_4^{2-} > MoO_4^{2-} > WO_4^{2-}$

(2) $CCl_4 < SiCl_4 < SnCl_4 < PbCl_4$

(3) $VO_3^{3-} < CrO_4^{2-} < MnO_4^-$

(4) $MnO_4^- < TcO_4^- < ReO_4^-$

90. Select the option(s) containing correct order of the parameters given

(a) increasing order of acidic strength: Na_2O, MgO, CO_2, SO_3

(b) Decreasing order of ionic radius: K^+, Na^+, Li^+, Mg^{2+}

(c) Decreasing order of boiling points: H_2O, HF, NH_3

(d) Decreasing order of boiling points: He, Ne, Ar, Xe

(1) a, b, d (2) b, c, d

(3) a, b, c (4) b, c

91. Identify the correct set of statements :

(a) Increase in incident light beyond a point cause the breakdown of chlorophyll and a decrease in photosynthesis.

(b) The primary CO_2 acceptor in C_4 plants is a 3-C molecule phosphoenol pyruvate (PEP) and is present in bundle sheath cells.

(c) To make one molecule of glucose, 6 turns of calvin cycle are required.

(d) The regeneration step require two ATP for phosphorylation to form RuBP.

Choose the correct answer from options given below :

(1) a, b and c only (2) a and c only

(3) b and d only (4) a, b, c and d all

92. **Statement I:** Oxidative phosphorylation take place in mitochondria.

Statement II: Calvin cycle take place in stroma of chloroplast.

(1) Statement I is true, Statement II is false.

(2) Statement I is false, Statement II is true.

(3) Both Statement I and Statement II are false.

(4) Both Statement I and Statement II are true.

93. Which of the following features is shared by all three classes of algae?

(1) Presence of air bladders

(2) Presence of flagellated asexual spores

(3) Vegetative reproduction by fragmentation

(4) Sexual reproduction of isogamous type

94. Which of the following groups of plants do not show independent free living existence of male and female gametophytes?

(1) Algae (2) Bryophytes

(3) Pteridophytes (4) Gymnosperms

95. Reduction in the number of chromosomes occur during

(1) Anaphase I (2) Anaphase II

(3) Metaphase I (4) Metaphase II

96. Amoeboid and ciliated protozoans both

(1) Can be fresh water forms

(2) Are multicellular

(3) Have same locomotory structure

(4) Cannot be parasitic

97. All of the following contraceptives are related with hormonal effects on the body, except

(1) CuT

(2) Lactational amenorrhea

(3) Progestasert

(4) LNG-20

98. Read the statements carefully and select the incorrect one w.r.t. gonadotrophins.

(1) LH stimulates the synthesis and secretion of progesterone

(2) LH induces ovulation in females

(3) Only FSH regulates spermatogenesis

(4) FSH stimulates growth and development of ovarian follicles

99. Some strains of B. *thuringiensis* kill insects like coleopterans. Select a coleopteran from the following.

(1) Flies (2) Beetles

(3) Mosquitoes (4) Armyworms

100. The ionic gradients across the resting membrane are maintained by active transport of ions by $Na^+ – K^+$ pump which transports

(1) $3Na^+$ into the cell for $2K^+$ outwards

(2) $2Na^+$ outwards for $3K^+$ into the cell

(3) $3K^+$ outwards for $2Na^+$ into the cell

(4) $3Na^+$ outwards for $2K^+$ into the cell

101. The three sketches (A, B and C) given below represents three different types of phyllotaxy select the option in which all are correctly identified:

(A) (B) (C)

(1) A=Opposite, B=Whorled, C=Alternate

(2) A=Whorled, B=Opposite, C=Alternate

(3) A=Alternate, B=Opposite, C=Whorled

(4) A=Alternate, B=Whorled, C=Opposite

102. Bacteriophages differ from plasmids in

(1) The ability to replicate within the host cell

(2) Being used as cloning vector

(3) Having high copy number

(4) Being independent of the control of chromosomal DNA

103. If a restriction enzyme cuts a circular DNA at three sites, then how many DNA fragments are formed?

(1) 3 (2) 1

(3) 2 (4) 4

104. Fungi do not

(1) Possess aseptate hyphae

(2) Have golgi bodies

(3) Synthesize their own food

(4) Store food material

105. Which of the following statements are correct regarding female reproductive system?

(A) Each ovary is connected to the pelvic wall and uterus by ligaments

(B) Hymen is a reliable indicator of virginity

(C) The uterus is single

(D) A functional mammary gland is characteristic of all female mammals

Options :-

(1) A and B only (2) A, B and C only

(3) A, C and D only (4) A and D only

106. Tetradynamous stamens are found in:

(1) Cruciferae (2) Amaryllidaceae

(3) Mimoseae (4) Compositae

107. In case of anemophily, the stigma are usually

(1) Needle-like and non-sticky

(2) Large and feathery

(3) Short and sticky

(4) Not well-exposed

108. An example of biofertilizer is

(1) *E. coli* (2) Baculovirus

(3) *Mycoplasma* (4) BGA

109. Match the following columns and select the correct option.

Column I	Column II
a. Ribozyme	i. Provides energy for polymerization
b. DNA ligase	ii. Synthesized by RNA polymerase
c. Deoxyribonucleoside triphosphate	iii. Codes for a polypeptide
d. Cistron	iv. Joins the DNA fragments

(1) a(iii), b(iv), c(ii), d(i)

(2) a(ii), b(i), c(iv), d(iii)

(3) a(ii), b(iv), c(i), d(iii)

(4) a(iii), b(ii), c(iv), d(i)

110. Select the odd one out w.r.t. modification of different types of roots for food storage.

(1) Turnip (2) Carrot

(3) Sweet potato (4) Radish

111. A pair of leaves arise at each node and opposite to each other in

(1) *Alstonia* (2) Guava

(3) Sunflower (4) Mustard

112. Select the element of tissue which lacks protoplast at maturity.

(1) Companion cell

(2) Sieve tube element

(3) Xylem parenchyma

(4) Tracheid

113. Select the feature which is not true for monocot stem.

(1) Sclerenchymatous hypodermis

(2) Parenchymatous ground tissue

(3) Ring arrangement of vascular bundles

(4) Water containing cavities are present within vascular bundles

114. Choose the correct sequence of wall layers in cell envelope (from outside to inside) in prokaryotic organisms.

(1) Plasma membrane → Cell wall → Glycocalyx

(2) Glycocalyx → Cell wall → Plasma membrane

(3) Cell Wall → Plasma membrane → Glycocalyx

(4) Plasma membrane → Glycocalyx → Cell wall

115. The site of formation of glycoproteins and glycolipids is

(1) Polysome

(2) Endoplasmic reticulum

(3) Peroxisome

(4) Golgi apparatus

116. Who gave the concept of "*Omnis cellula-e-cellula*" regarding cell theory?

(1) Rudolf Virchow

(2) Anton Van Leeuwenhoek

(3) Matthias Schleiden

(4) Theodor Schwann

117. **Statement I:** Heterozygous female for haemophilia may transmit the disease to sons.

Statement II: Sickle-cell anaemia is caused by the substitution of valine (val) by glutamic acid (Glu) of β-globin chain.

(1) Statement I is true, Statement II is false.
(2) Statement I is false, Statement II is true.
(3) Both Statement I and Statement II are false.
(4) Both Statement I and Statement II are true.

118. Correct sequence of taxonomic categories showing hierarchical arrangement in ascending order is

(1) Genus → Species → Class → Order → Phylum → Kingdom
(2) Species → Genus → Family → Class → Order → Kingdom
(3) Kingdom → Phylum → Class → Order → Family → Genus → Species
(4) Species → Genus → Family → Order → Class → Phylum → Kingdom

119. Which of the following statements are correct?

(A) Neutrophils are most abundant cells of the total WBCs.
(B) Neutrophils resist infections and are associated with allergic reactions.
(C) Basophils secrete histamine, serotonin and heparin and are involved in inflammatory response.
(D) Both B and T lymphocyte are responsible for immune responses of the body.
(E) Monocyte and acidophils are respectively2-3% and 6-8% of total WBCs.

(1) B, C and E only
(2) A, C and D only
(3) B and E only
(4) A and E only

120. Which of the following is not an ecosystem function?

(1) Stratification (2) Productivity
(3) Decomposition (4) Energy flow

121. Which among the following is not a part associated with ground tissue system?

(1) *Cortex* (2) Stomata
(3) Pericycle (4) Pith

122. In the technique that involves southern blot hybridization for DNA fingerprinting, which of the following is used as a probe?

(1) Radiolabelled satellite DNA
(2) DNA fragment of the sample
(3) Radiolabelled DNA sequence that is expressed as mRNA
(4) Complete DNA of a cell

123. All of the following are present in both nucleosome and ribosome, except

(1) N-glycosidic linkage
(2) Proteins
(3) Purines
(4) 5-methyl uracil

124. Select the incorrect match from the following.

(1)	z gene of lac operon	– Hydrolysis of disaccharide
(2)	Total number of genes estimated in human	– About 3×10^9
(3)	The human chromosome having fewest gene	– Present in males
(4)	y gene of lac operon	– Associated with permeability of β-galactosides

125. Read the following statements.

a. Alexander von Humboldt observed that within a region, species richness increases with increasing explored area, but only up to a limit.
b. The regression coefficient, i.e., the value of Z lies in the range of 0.6 to 1.2, when the species-area relation is done for very small areas.
c. Without any exception, tropics harbour more species than temperate areas.

The correct one(s) is/are

(1) All a, b and c (2) b only
(3) a and b only (4) a only

126. Algin can be obtained from the members of

(1) Chlorophyceae (2) Phaeophyceae
(3) Rhodophyceae (4) Red algae

127. **Statement I:** Secondary structure of t-RNA has been depicted that looks like a clover-leaf but in actual structure, it is a compact molecule which looks like inverted L.

Statement II: Charging of t-RNA is the first phase in which amino acids are activated without using ATPs.

(1) Statement I is true, Statement II is false.
(2) Statement I is false, Statement II is true.
(3) Both Statement I and Statement II are false.
(4) Both Statement I and Statement II are true.

128. All sperms of which of the following males have same type of sex chromosomes?

(1) Human
(2) Grasshopper
(3) Drosophila
(4) Birds

129. Which of the following options is wrong regarding cytokinins?

(1) Cytokinins have specific effect on cytokinesis
(2) Kinetin occur naturally in plants
(3) Zeatin is a natural substance with cytokinin like activity
(4) Natural cytokinins are synthesized in regions where active cell division occurs

130. a. Gecko lizard can act as pollinator.
b. Flower of *Amorphophallus* is about 6 feet in height.
c. Flowers produce less pollen grains, when pollinated by abiotic agent.
d. All angiosperms shed their pollen grain from anther at 3-celled stage.

How many of the above statements is/are incorrect?

(1) Four (2) Two
(3) One (4) Three

131. Find the incorrect pair

(1) LAB – Curd
(2) *Monascus* – Lipase
(3) *Aspergillus* – Citric acid
(4) *Mycorrhiza* – Biofertilizer

132. Experiment by Jan Ingen-Housz showed _____ was required for photosynthesis.

(1) H_2O (2) Chlorophyll
(3) Sunlight (4) CO_2

133. One of the difference between C_4 and C_3 pathways of photosynthesis is that

(1) The former does not require NADP
(2) The former requires extra ATP to fix same amount of CO_2
(3) The latter occurs only in dicot plants
(4) The latter occurs only in mesophyll cells of the leaves in C_4 plants

134. Select the incorrect match w.r.t. aestivation in corolla and its example.

(1) Twisted – Cotton
(2) Imbricate – China rose
(3) Vexillary – Pea
(4) Valvate – *Calotropis*

135. Select the correct statement regarding chloroplast.

(a) It is a double membrane bound organelle
(b) Membrane of thylakoids enclose a space called a lumen
(c) Thylakoids are arranged in stacks, like a pile of coins
(d) The outer membrane of the chloroplast is relatively less permeable than inner membrane

(1) All a, b and c (2) a only
(3) a and d only (4) b only

136. If '+' sign is assigned to beneficial interaction, '–' sign to detrimental and '0' sign to neutral interaction, then how many of the following is/are representing '+' and '–' interaction.

a. Orchid growing on a mango branch
b. Sea anemone and clown fish
c. Lichens
d. Sparrow eating any seed
e. *Cuscuta* on hedge plants

(1) Two
(2) Three
(3) One
(4) Five

137. Platelets are cell fragments produced from

(1) Megakaryocytes in the spleen
(2) Megakaryocytes in the bone marrow
(3) Thrombocytes in the bone marrow
(4) Thrombocytes in the spleen

138. **Assertion (A):** In dicot leaf, epidermis covers both the upper surface (adaxial epidermis) and lower surface (abaxial epidermis)

Reason (R): The adaxial epidermis bears more stomata than the abaxial epidermis.

(1) (A) is true but (R) is false
(2) (A) is false but (R) is true
(3) Both (A) and (R) are true and (R) is correct explanation of (A)
(4) Both (A) and (R) are true but (R) is not correct explanation of (A)

139. The connective tissues which support and protect softer tissues and also serve weight bearing function, contain all of the following, except

(1) Calcium salts
(2) Hard ground substance
(3) Collagen fibres
(4) Solid and pliable intercellular material

140. Read the given features

a. Mosaic vision
b. Uricotelic
c. Collaterial glands
d. Spermatheca

The presence of above given features is best applicable to which organism?

(1) Male frog
(2) Female cockroach
(3) Male cockroach
(4) Earthworm

141. Read the given statements and select the correct option.

Assertion (A): CAD is characterized by decrease in blood supply to heart muscles.

Reason (R): Deposition of calcium, fat, cholesterol and fibrous tissues in coronary arteries, makes the lumen of arteries narrower.

(1) Both (A) and (R) are true and (R) is the correct explanation of (A)
(2) Both (A) and (R) are true but (R) is not the correct explanation of (A)
(3) (A) is true but (R) is false
(4) (A) is false but (R) is true

142. Choose the correct statement.

(a) All vertebrates have complex tubular organs called kidneys for osmoregulation
(b) All segmented animals possess the tubular excretory structures named nephridia
(c) Flame cells are the excretory structure in flatworms
(d) Green glands help in the removal of nitrogenous waste and osmoregulation in crustaceans.

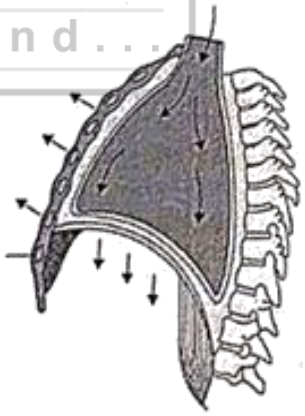
(1) a, b and c (2) a only
(3) a, c and d only (4) b only

143. Select the set of correct statements from the options given below.

(A) Innate immunity is non specific.
(B) Bacteria infected cells secrete protein called interferons
(C) The T-lymphocytes mediate CMI
(D) Typhoid fever could be confirmed by Widal test.

(1) A & B are correct
(2) B & C are correct
(3) C & D are correct
(4) A, C & D are correct

144. Consider the given diagram and choose the incorrect statement.



(1) Contraction of diaphragm leads to increase in volume of thoracic cavity in dorso-ventral axis
(2) Intrapulmonary pressure is less than the atmospheric pressure during inspiration
(3) Contraction of external inter-costal muscles lift up the ribs
(4) There is a negative pressure in the lungs with respect to atmospheric pressure

145. In which of the given organisms, uric acid is the main excretory product?

(1) Mammals
(2) Marine fishes
(3) Land snails
(4) Terrestrial amphibians

146. Identify correct set of statements.

(a) In nearly all animal tissues specialised junction provide both structural and functional links between its individual cells.
(b) Gap junctions help to stop substances from leaking across a tissue.
(c) Tight junctions perform connecting the cytoplasm to keep neighbouring cells together.
(d) Epithelium tissue are most abundant and widely distributed in the body of complex animals.

Choose the correct answer from the options given below.

(1) (a) and (d) only
(2) (b) and (c) only
(3) (a) only
(4) (a), (c) and (d) only

147. The total number of ear ossicles in an adult man is equal to the total number of 'x' in an adult man. Identify 'X' and select the correct option.

(1) Cranial bones
(2) Pelvic Girdle bones
(3) Facial bones
(4) Limb bones

148. During muscle contraction, all of the following events take place, except

(1) Reduction in the length of I-band
(2) Narrowing of H-zone
(3) Increase in overlapping zone
(4) Reduction in the length of A-band

149. Which among the following is distinguishable feature in between the reptiles and aves?

(1) Type of fertilization
(2) Regulation of body temperature
(3) Type of development
(4) Tendency to lay eggs

150. A fish came to the shore along with large waves. A zoologist observed that it is a Torpedo exhibiting all of the features, except

(1) Presence of minute placoid scales
(2) Presence of electric organs
(3) Terminal mouth
(4) Gill slits without the gill cover

151. Match the column-I with column-II and select the correct option.

Column I	Column II
a. *Ichthyophis*	i. Flightless bird
b. *Struthio*	ii. Oviparous mammal
c. *Ornithorhynchus*	iii. Limbless amphibian
d. *Alligator*	iv. Reptile with 4-chambered heart
	v. Viviparous amphibian

(1) a(v), b(i), c(iv), d(iii)
(2) a(iv), b(iii), c(i), d(ii)
(3) a(iii), b(i), c(iv), d(ii)
(4) a(iii), b(i), c(ii), d(iv)

152. Which of the following statements are correct about transmission of HIV infection.

(A) By sexual contact with infected person
(B) By transfusion of contaminated blood.
(C) By sharing infected needles
(D) By mutation
(E) By excessive doses of drugs

Choose the correct answer from the options given below.

(1) C and D only (2) A, B and C only
(3) D and E only (4) A and D only

153. **Statement I:** Thorns of Bougainvillea and tendrils of Cucurbita represents homology.

Statement II: Homology does not indicate common ancestry.

(1) Statement I is true, Statement II is false.
(2) Statement I is false, Statement II is true.
(3) Both Statement I and Statement II are false.
(4) Both Statement I and Statement II are true.

154. Which of the given hormones is secreted by adenohypophysis and acts on interstitial cells of testis to stimulate synthesis and secretion of androgens?

(1) LH (2) ACTH
(3) GnRH (4) ADH

155. Select the correct option w.r.t gestation to complete the analogy

Foetus develops limbs and digits : by the end of second month of gestation :: First movement of foetus : _____

(1) End of 24 weeks
(2) During 5th month
(3) End of 4th week
(4) During 12th week

156. Read the given statements carefully and select the incorrect one w.r.t. the male and female condoms.

(1) These are barriers made of thin rubber
(2) Gives privacy to the user
(3) These are reusable
(4) Condoms prevent ovum and sperm from physical meeting

157. Along with cell body of neuron, Nissls granules are also found in which part of neuron?

(1) Axon
(2) Node of Ranvier
(3) Dendrites
(4) Schwann cells

158. Inhibiting hormones secreted from hypothalamus reach the anterior pituitary gland through

(1) Hypophyseal artery
(2) Hypophyseal portal system
(3) Lymph vessels
(4) Axonal path

159. Lipids are not strictly macromolecules because

(1) Molecular weight of lipids is less than 800 Da
(2) On grinding, lipids get broken and arranged into vesicles
(3) These are present in acid soluble pool
(4) These constitute cellular organelles

160. B. *thuringiensis* forms _____ during a particular phase of their growth, which is activated in alkaline medium in insects.

Fill in the blank correctly from the options given below.

(1) Polysaccharide crystals
(2) Fat globules
(3) Protein crystals
(4) Cyst

161. Read the given statements and select the correct option.

Statement-A: The construction of the first rDNA emerged from the possibility of linkage a gene encoding antibiotic resistance with a plasmid of organism that causes typhoid in humans.

Statement-B: *Agrobacterium tumefaciens* is a pathogen of rice that transforms normal plant cells into a tumour.

(1) Both statements A and B are correct
(2) Both statements A and B are incorrect
(3) Only statement A is correct
(4) Only statement B is correct

162. The process in which separated brands of DNA are cut out from the agarose gel and extracted from the gel piece is known as

(1) Spooling (2) Elution
(3) Centrifugation (4) Electrophoresis

163. Select the correct statements.

A. In the 24 hour average duration of cell cycle of a human cell, cell division proper lasts for only about an hour.
B. During the G_2 phase, proteins are synthesised in preparation for mitosis while cell growth stops.
C. The chromosomal material becomes untangled during the process of chromatin condensation.
D. Cell-plate represents the middle lamella between the walls of two adjacent human cells.
E. Cell growth results in disturbing the ratio between the nucleus and the cytoplasm

(1) A, B, C, D & E
(2) A, C, D, & E only
(3) A, D, & E only
(4) A, C & E only

164. Who disapproved embryological support for evolution given by Ernst Haeckel?

(1) Karl Ernst von Baer
(2) Thomas Malthus
(3) Darwin
(4) S.L. Miller

165. The experiment conducted by S.L. Miller in 1953 supported which theory of evolution?

(1) Theory of spontaneous generation
(2) Biogenesis
(3) Chemical evolution of life
(4) Natural selection

166. **Statement I:** Trachea is a straight tube extending upto the mid-abdominal cavity, which divides at the level of 5th lumbar vertebra into a right and left primary bronchi.

Statement II: The trachea, primary, secondary and tertiary bronchi and initial bronchioles are supported by incomplete cartilaginous rings.

(1) Statement I is true, Statement II is false.
(2) Statement I is false, Statement II is true.
(3) Both Statement I and Statement II are false.
(4) Both Statement I and Statement II are true.

167. Match list-I with list-II.

List-I		List-II	
A.	Acid in the stomach, tear from eye	I.	Cellular immunity
B.	Antibody	II.	Physical barrier
C.	T-lymphocyte	III.	Humoral immunity
D.	Mucous coating	IV.	Physiological barrier

(1) A-IV, B-II, C-III, D-I
(2) A-II, B-IV, C-I, D-III
(3) A-IV, B-I, C-II, D-III
(4) A-IV, B-III. C-I, D-II

168. All of the following statements are correct w.r.t. malaria, except

(1) Sporozoites are stored in salivary glands of mosquito
(2) Gametocytes of *Plasmodium* develop in human RBCs
(3) Haemozoin is released from ruptured RBCs
(4) Female mosquito takes up gametes with blood meal

169. The given drugs can be used to reduce the symptoms of allergy, except

(1) Anti-histamine (2) Steroids
(3) Serotonin (4) Adrenaline

170. Read the given statements and select the correct option.

Assertion (A): *Hirudinaria* and *Pterophyllum* both have closed circulatory system.

Reason (R): In closed circulatory system blood pumped by heart is always circulated through a network of blood vessels.

(1) Both (A) and (R) are true and (R) is the correct explanation of (A)
(2) Both (A) and (R) are true but (R) is not the correct explanation of (A)
(3) (A) is true but (R) is false
(4) (A) is false but (R) is true

171. Select the correct match.

(1)	pCO_2 in alveolar air	–	More than the pO_2 in alveolar air
(2)	pO_2 in systemic veins	–	Equal to the pCO_2 in pulmonary veins
(3)	pCO_2 in systemic arteries	–	Less than the pO_2 in pulmonary artery
(4)	pO_2 in pulmonary veins	–	Less than the pO_2 in pulmonary artery

172. All of the following belong the same class, except

(1) Pavo (2) Pasittacula
(3) Macropus (4) Neophron

173. Malpighian tubules and nephridia are excretory structures of organisms 'X' and 'Y'.

Select the correct option for 'X' and 'Y' respectively.

(1) Aedes and Aplysia
(2) Pheretima and Anopheles
(3) *Bombyx* and Nereis
(4) Planaria and Locusta

174. In cockroach, the sense organs are -

(A) Anal style
(B) Antennae
(C) Maxillary palps
(D) Eyes
(E) Malpighian tubules

(1) A, B and E only
(2) B, C and D only
(3) B and D only
(4) A and E only

175. Industrial melanism is an example of type of natural selection in which more individuals acquire

(1) The mean character value

(2) Value other than the mean character value

(3) Peripheral character values at both ends of the distribution curve

(4) Values that leads to formation of two peaks in distribution curve

176. Consider the given statements w.r.t. enzyme action.

a. A competitive inhibitor closely resembles the substrate in its molecular structure.

b. Substrate binds to the allosteric site of inhibitor.

c. Enzyme-substrate complex is short-lived and dissociates into its product.

Choose the option with all correct statements.

(1) a and c (2) b and c

(3) a and b (4) a, b and c

177. Read the following statements and select the **correct** option.

Assertion (A): Lichens are considered as indicators of industrial pollution.

Reason (R): Lichens can grow well in polluted environment.

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

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

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

(4) Both (A) and (R) are false

178. Experimental verification of the chromosomal theory of inheritance was done by

(1) Sutton and Boveri

(2) Gregor Mendel

(3) Bateson and Punnett

(4) Thomas Hunt Morgan

179. A disease caused by an allosomal non-disjunction is

(1) Down's syndrome

(2) Turner's syndrome

(3) Edward's syndrome

(4) Sickle cell anaemia

180. Regarding blood group, the genotype of a husband and his wife are I^AI^B and I^AI. They never had a child with blood group O. The reason behind this, is

(1) I^A is dominant over I but not over I^B, so I cannot express itself

(2) I^B is dominant over I but not I^A, so I cannot express itself

(3) I is dominant over I^A and I^B, so I^A and I^B cannot express itself

(4) I^A and I^B are completely dominant over I, so I allele can express itself in homozygous conditions only

Syllabus

FT – 2

Day & Date : 28 May, 2026
Time : 10: 00 AM to 1: 00 PM
Physics : FULL COURSE
Chemistry : FULL COURSE
Biology : FULL COURSE

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