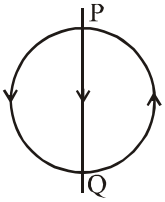
TOPICS

PHYSICS, CHEMISTRY, BOTANY & ZOOLOGY : Complete Syllabus.

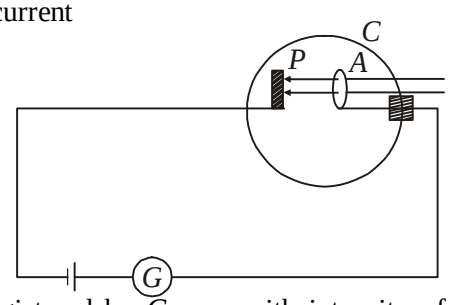
PHYSICS

1. The earth radiates in the infra red region of the spectrum. The spectrum is correctly given by
   (1) Planck's law of radiation
   (2) Stefan's law of radiation
   (3) Wein's law (4) Tayleight Jean's law
2. In a hypothetical Bohr hydrogen, the mass of the electron is doubled. The energy E_0 and radius r_0 of the first orbit will be (a_0 is the Bohr radius)
   (1) $E = -27.2$ eV ; $r_0 = a_0$
   (2) $E = -13.6$ eV ; $r_0 = a_0 / 2$
   (3) $E = -27.2$ eV ; $r_0 = a_0 / 2$
   (4) $E = -13.6$ eV ; $r_0 = a_0$
3. Two identical fuses are rated at 10 A. If they are joined
   (1) In parallel, the combination acts as a fuse of rating 20 A
   (2) In parallel, the combination acts as a fuse of rating 5A
   (3) In series, the combination acts as a fuse of rating 15 A
   (4) In series, the combination acts as a fuse of rating 20 A
4. Green houses are provided with glass roofings and walls because glass
   (1) Transmits the radiations from a source of high temperature and absorbs the radiations from a source of low temperature
   (2) Transmits the radiations from a source of low temperature and absorbs the radiations from a source of low temperature
   (3) Absorbs the radiations from both types of sources at low and high temperature
   (4) Transmits the radiations from both type of sources
5. The difference in the working of an amplifier and a step up transformer is
   (1) Amplifier also increases power which is not possible with transformer
   (2) Amplifier decreases the power whereas the transformer increases the power
   (3) Amplifier keeps the power constant whereas the transformer decreases the power
   (4) Amplifer keeps the power constant whereas the transformer increases the power
6. A body executing SHM has maximum acceleration $24\ \text{ms}^{-2}$ and maximum velocity $16\ \text{ms}^{-1}$. The amplitude of SHM is
   (1) $\frac{64}{9}$m
   (2) $\frac{1024}{9}$m
   (3) $\frac{3}{32}$m
   (4) $\frac{32}{3}$m
7. The mean free path (λ) of a gas is such that
   (1) $\lambda \alpha n$ (2) $\lambda \alpha \frac{1}{n}$
   (3) $\lambda \alpha \sqrt{d}$ (4) $\lambda \alpha d^2$
8. A circular coil of wire carries a current. PQ is a part of a very long wire carrying a current and passing close to the circular coil. The direction of currents are those shown in figure. What is the direction of force acting on PQ ?

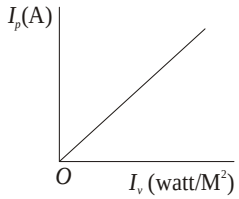


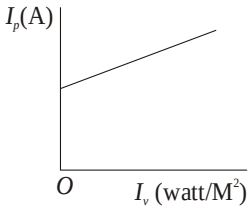
   (1) Parallel to PQ, towards P
   (2) Parallel to PQ, towards Q
   (3) At right angles to PQ, towards the right
   (4) At right angles to PQ, towards the left
9. Motion of a charge particle in uniform electric field
   (1) can be straight line
   (2) can be ellipse
   (3) can be parabola
   (4) both (1) and (3)

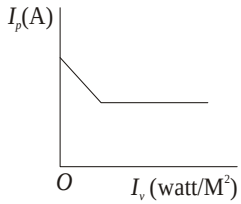
10. A photoemissive cell C is connected to a low resistance circuit consisting of a cell and a microammeter G, as shown. Electromagnetic radiation falls on to the photocathode P. In which of the following ways does the current

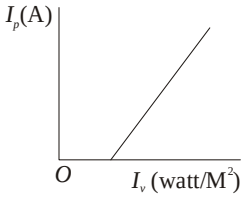


I_p registered by G vary with intensity of radiation I_v ?

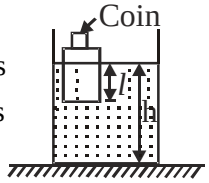
(1) 

(2) 

(3) 

(4) 

11. A wooden block, with a coin placed on its top, floats in water as shown in the figure. The distance l and h are shown there. After some time the coin falls into the water. Then



(1) l decreases and h increases
(2) l increases and h decreases
(3) Both l and h increase
(4) Both l and h decrease

12. On a calm day a boat can go across a lake and return in time T_0 at a speed V. On a rough day there is uniform current at speed v to help the onward journey and impede the retun journey. If the time taken to go across and return on the day be T, then T/T_0 is

(1) $1-v^2/V^2$ (2) $\dfrac{1}{1-v^2/V^2}$

(3) $1+v^2/V^2$ (4) $\dfrac{1}{1+v^2/V^2}$

13. Waves from two different sources overlap near a particular point. The amplitude and the frequency of the two waves are the same. The ratio of the intensity when the two waves arrive in the phase to that when they arrive 90º out of phase is:

(1) 1 : 1 (2) $\sqrt{2}:1$

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

14. The threshold frequency for a certain metal is v_0. When light of frequency $v = 2v_0$ is incident on it, the maximum velocity of photoelectrons is 4×10^6 m/s. If the frequency of incident radiation is increased to $5v_0$, then the maximum velocity of photoelectrons in m/sec will be

(1) $4/5 \times 10^6$ (2) 2×10^6

(3) 8×10^6 (4) 2×10^7

15. Planck time depends upon c, G, and h where letters have their usual meaning. Then Planck time can be given by

(1) $K\sqrt{\dfrac{G^2h}{C^4}}$ (2) $K\sqrt{\dfrac{Gh}{C^5}}$

(3) $K\sqrt{\dfrac{Gh^2}{C^3}}$ (4) $K\sqrt{\dfrac{G^2h^2}{C^4}}$

16. A body of mass 500 g is slowly taken up an inclined plane of length 10 m and height 5 m by a force parallel to the plane and then allowed to slide down slowly to the bottom. The coefficient of friction between the body and the plane is 0.1. What is the magnitude of work done in the round trip by the external force?

(1) 5 J (2) $\left(5/\sqrt{3}\right)$J

(3) $5\sqrt{3}$ J (4) 15 J

17. The cylindrical tube of spray gun has a radius R, one end of which has n fine holes each of radius r. If the speed of flow of the liquid in the tube is V, the speed of ejection of the liquid through the holes is

(1) $\dfrac{V}{n}\left(\dfrac{R}{r}\right)$ (2) $\dfrac{V}{n}\left(\dfrac{R}{r}\right)^{\frac{1}{2}}$

(3) $\dfrac{V}{n}\left(\dfrac{R}{r}\right)^{\frac{3}{2}}$ (4) $\dfrac{V}{n}\left(\dfrac{R}{r}\right)^{2}$

18. Two identical thin rings each of radius R are coaxially placed at a distance R apart. If Q_1 and Q_2 are respectively the charges uniformly spread on the two rings, the work done in moving a charge q from the centre of one ring to the other is

(1) $\frac{q(Q_1/Q_2)(\sqrt{2}+1)}{\sqrt{2}\,4\pi\varepsilon_0 R}$ (2) $\frac{q(Q_1-Q_2)(\sqrt{2}-1)}{\sqrt{2}\,4\pi\varepsilon_0 R}$

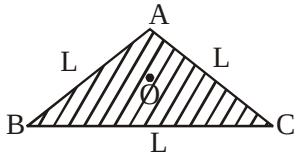
(3) $\frac{q\sqrt{2}(Q_1+Q_2)}{4\pi\varepsilon_0 R}$ (4) Zero

19. A particle moves from position vector $\vec{r}_1$ to position vector $\vec{r}_2$. Magnitudes of these vector are respectively $r_1 = 3$ and $r_2 = 4$ and the angle they make with the x-axis are $\theta_1 = 75°$ and $\theta_2 = 15°$ respectively. Then magnitude of the displacement vector is

(1) $\sqrt{3}$ (2) $\sqrt{13}$

(3) 5 (4) $\sqrt{1}$

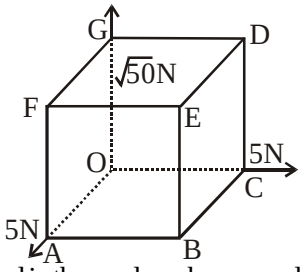
20. From a triangular lamina having having mass M, dimension L is cut BOC section. Movement of inertia of remaining part about O will be (O is centroid of triangle ABC)



(1) $\frac{Ma^2}{12}$ (2) $\frac{Ma^2}{24}$

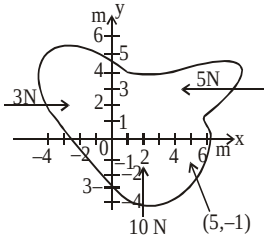
(3) $\frac{Ma^2}{18}$ (4) $\frac{Ma^2}{3}$

21. Three forces of magnitudes 5N, 5N and $\sqrt{50}$N act at a corner of a cube along the three sides as shown in the given figure. Resultant of these forces is



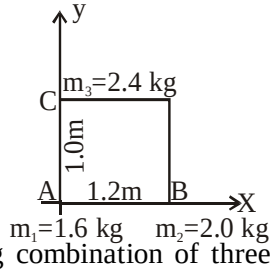
(1) 10 N along OB
(2) 15 N along OA
(3) 15 N along OC
(4) 10 N along OE

22. A two-dimensional body, placed in the xy plane, has several forces acting on it, as shown. The torque about the point A (5, –1) is



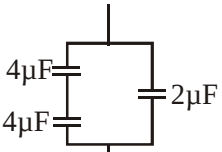
(1) 17 Nm clockwise (2) 17 Nm anticlockwise
(3) 19 Nm clockwise (4) 19 Nm anticlockwise

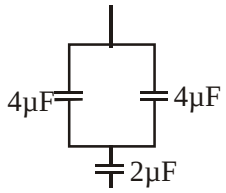
23. Three point masses m_1, m_2 and m_3 are placed at the corners of a thin massless rectangular sheet (1.2 m × 1.0 m), as shown in the diagram. The centre of mass of the system is located at the point with coordinates,



(1) (0.8, 0.6) m
(2) (0.6, 0.8) m
(3) (0.4, 0.4) m
(4) (0.5, 0.6) m

24. Which one of the following combination of three capacitors would give a net capacitance of 1μF ?

(1)


(2)


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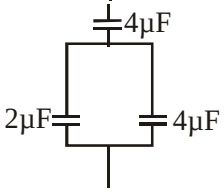
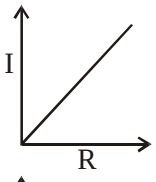
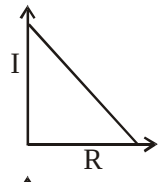
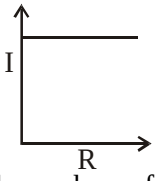


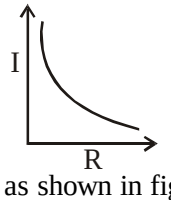
(4)


25. If a variable resistance is connected to a cell of constant e.m.f., then which one of the following graphs represents the relationship between current, I and resistance, R ? (assume that $r << 1\,\Omega$)

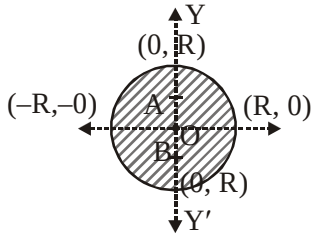
(1)


(2)


(3)


(4)


26. A glass sphere of radius R is as shown in figure. An object is seen from position just above (0, R). For variable positions of object the position of image will be



(1) If object is at A it will be seen above A
(2) If object is at B it will be seen below B
(3) If object is at O it will be seen there itself
(4) All of these

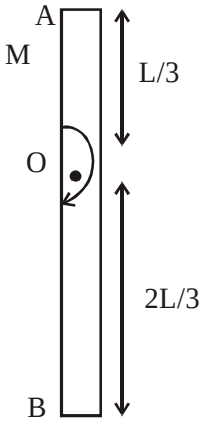
27. A rod of length L is hinged at O vertically. If displaced slightly it will start oscillating have time period

(1) $2\pi\sqrt{\frac{3g}{2L}}$

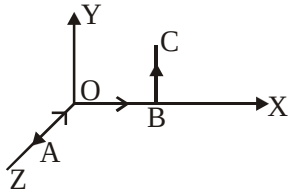
(2) $2\pi\sqrt{\frac{2L}{3g}}$

(3) $2\pi\sqrt{\frac{L}{3g}}$

(4) $2\pi\sqrt{\frac{g}{3L}}$



28. A wire carrying current I is kept as shown in figure. AO, OB, BC all having length L. The magnetic field induction at O will be



(1) $\frac{\mu_0 I}{4L}$

(2) $\frac{\mu_0 I}{4\sqrt{2}\pi L}$

(3) $\sqrt{2}\frac{\mu_0 I}{4L}$

(4) Zero

29. A heavy disc is gently placed on a horizontal surface after it has been given angular velocity (V_0/R) . It will start rolling without slipping when the speed of its centre becomes

(1) $\frac{V_0}{3}$

(2) $\frac{2V_0}{3}$

(3) $\frac{3V_0}{5}$

(4) $\frac{5V_0}{7}$

30. Displacement 'S' covered by the moving body is varying with time 't' as $S^2 = 2t$. Velocity 'v' is varying with displacement 'S' as

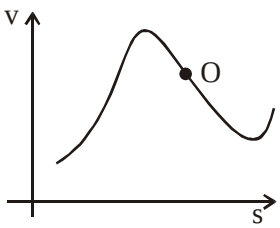
(1) S

(2) S^2

(3) $\frac{1}{S}$

(4) $\frac{1}{S^2}$

31. Velocity 'v' of the moving body is varying with displacement 's' as



Accleration of the body at indicated point 'O' is

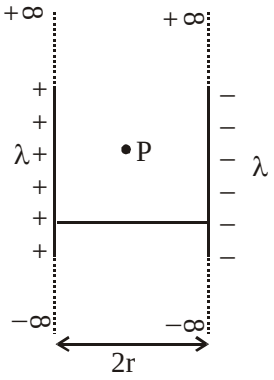
(1) –ve

(2) +ve

(3) Zero

(4) None of these

32. Electric field at a mid-point P is



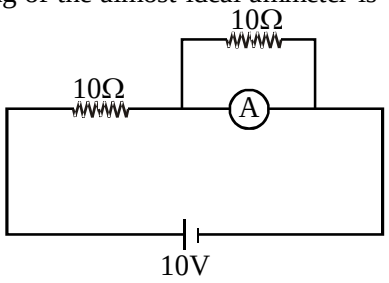
(1) $\frac{\lambda}{2\pi\varepsilon_0 r}$

(2) $\frac{\lambda}{\pi\varepsilon_0 r}$

(3) $\frac{2\lambda}{\pi\varepsilon_0 r}$

(4) $\frac{\lambda}{4\pi\varepsilon_0 r}$

33. Reading of the almost ideal ammeter is



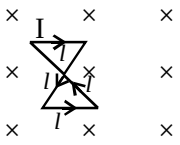
(1) 1 A

(2) $\frac{1}{2}$ A

(3) 2 A

(4) 4 A

34. Magnetic force on a given loop as shown below is (Current in the loop is I and length of each wire is *l*)



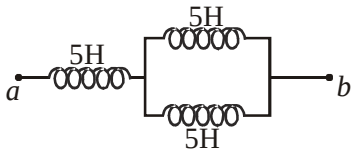
(1) 3 I*l*B

(2) I*l*B

(3) 2 I*l*B

(4) Zero

35. Effective inductance of the given circuit between terminals a and b



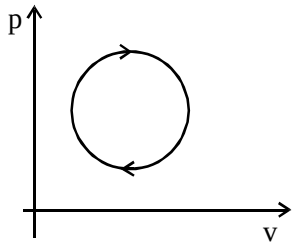
(1) 7.5 H

(2) 15 H

(3) 5 H

(4) 3.3 H

36. From the given figure, which one of the alternative is most appropriate



(1) Work is done by the gas

(2) Work is done on the gas

(3) Change in internal energy of the gas in a given process is zero

(4) Both (1) and (3) are correct

37. An electron is going along the x axis, suddenly it defects towards the z axis, it shows that magnetic field is acting along

(1) +ve Y axis (2) –ve Y axis

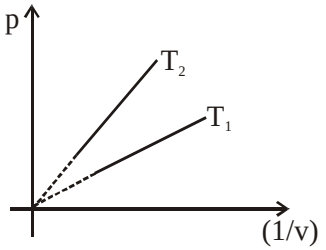
(3) +ve X axis (4) –ve Z axis

38. A trajectory of a particle in a vertical plane is $Y = ax - bx^2$. Range of a particle is

(1) $\frac{a}{b}$ (2) $\frac{a}{2b}$

(3) $\frac{2a}{b}$ (4) $\frac{a^2}{b}$

39. What can you say from the graph



(1) $T_1 = T_2$ (2) $T_1 < T_2$

(3) $T_1 > T_2$ (4) Insufficient data

40. Two particles proton and doubly ionised Helium atom are accelerated through the same potential difference. Ratio of their momentum is

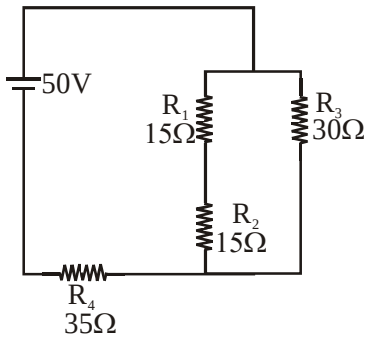
(1) $2\sqrt{2} : 3$

(2) $1 : 2\sqrt{2}$

(3) 1 : 1

(4) 2 : 1

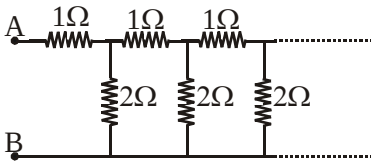
41. The potential difference, in volts, across the resistance R_2 in the circuit given below, is



(1) 5 V (2) 7.5 V

(3) 10 V (4) 15 V

42. An infinite network of resistance is constructed as shown in the figure

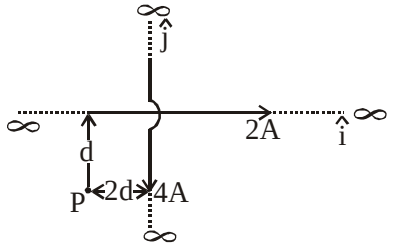


Effective resistance, in ohms, between A and B is

(1) 1 (2) 2

(3) $\frac{8}{3}$ (4) ∞

43. Two infinitely long conducting wires, carry currents, as shown in the figure. If the horizontal wire carrying current produces a magnetic field, B at the point P (–2d, –d, 0), then the resultant magnetic field, at this point is



(1) $-2.0\,B\hat{k}$ (2) $-1.5\,B\hat{k}$

(3) Zero (4) $+1.5\,B\hat{k}$

44. When $_{13}Al^{27}$ is bombarded by deuterons, α -particles are emitted as represented by the following equation

$$_{13}Al^{27} + _1H^2 \rightarrow \alpha + _Z X^A$$

The product $_ZX^A$ is

(1) $_{12}Mg^{25}$ (2) $_{11}Na^{23}$

(3) $_{14}Si^{28}$ (4) $_{15}P^{31}$

45. A NPN transistor circuit has $\alpha = 0.985$. If $I_C = 2$ mA, then the value of I_B is

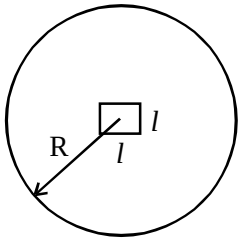
(1) 0.03 mA

(2) 0.003 mA

(3) 0.66 mA

(4) 0.015 mA

46. Mutual induction (M) between the two coils mentioned below is proportional to (assume R >>*l*)

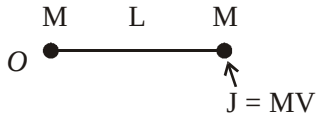


(1) l/R (2) l^2/R
(3) R/l^2 (4) l/R^2

47. Two charges q_1 and q_2 move with equal speeds v parallel to each other. The ratio of magnetic and electrical forces between them is
(1) v/c (2) c/v
(3) v^2/c^2 (4) c^2/v^2

48. A particle of mass 0.01 kg is projected with velocity $v = 2\hat{i}$ m/s from point (0, 0). Which of the following point it will cross
(1) (20, 0) (2) (40, 0)
(3) (10, 0) (4) All the above points

49. Consider a body, shown in figure, consisting of two identical balls, each of mass M connected by a rigid rod. If an impulse J = Mv is imparted to the body at one of its ends, what would be its angular velocity when the system rotates about 'O'



(1) $\frac{v}{L}$ (2) $\frac{2v}{L}$
(3) $\frac{v}{3L}$ (4) $\frac{v}{4L}$

50. Calculate the amount of heat required to raise the temperature of n moles of an H_2 gas through T Kelvin in such a process whose equation is PV^2 = const
(1) $\frac{3}{2}nRT$ (2) nRT
(3) $\frac{5}{2}nRT$ (4) None of these

CHEMISTRY

51. Which of the following is a correct statement?
(1) He^+ ion with an electron in n = 3 is larger in size than Li^{2+} ion with an electron in n = 5
(2) Velocity of an electron in third orbit of H-atom is lesser than that of velocity in its first orbit
(3) When an electron jumps from n = 5 to its ground state, total number of spectral lines are 15
(4) Total number of electrons for n = 4 and $s = -\frac{1}{2}$ is 32

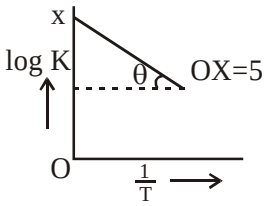
52. Considering the following elements, which of the following is incorrect regarding characteristics shown : N, P, O, S
(1) N > O : (Ionisation enthalpy)
(2) N > S : (Nonmetallic character)
(3) S > N : (Ionisation energy)
(4) S > N : (Electron gain enthalpy)

53. For a given Daniel cell, the E° value is 1.10 when all substance are at IM concentration at 299 K. What is equilibrium constant K for the cell:

$$Zn(s) + Cu^{2+}(1M) \rightleftharpoons Zn^{2+}(1M) + Cu(s)$$

(1) 10^5 (2) 10^{27}
(3) 10^{37} (4) 10^{17}

54. In the given graph, slope is found $-\frac{1}{2.303}$ what is the value of Ea



(1) 2.303 cal
(2) $\frac{2}{2.303}$cal
(3) 2 cal (4) $\frac{2.303}{2}$cal

55. Biotin is another name of vitamin
(1) B (2) C
(3) E (4) H

56. Compound A with molecular formula C_4H_9Br with aqueous NaOH gives compound B, which on oxidation gives C. If C is further oxidised vigorously propanoic acid and ethanoic acid are formed. What is structure of compound B
(1) $CH_3-(CH_2)_2-\underset{\displaystyle OH}{\underset{|}{CH}}-CH_3$
(2) $CH_3-\underset{\displaystyle OH}{\underset{|}{CH}}-CH_2-CH_3$
(3) $CH_3–CH_2–O–CH_2–CH_3$
(4) $CH_3–CH_2–CH_2–O–CH_3$

57. Isoelectric point of neutral aminoacids lies in between
(1) 7-9 (2) 4.3-5.4
(3) 5.5-6.3 (4) 6.2-8.3

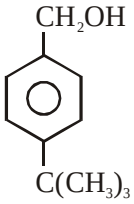
58. Polypeptides are
(1) Acidic (2) Basic
(3) Neutral (4) Amphoteric

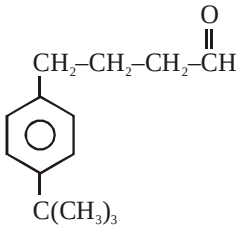
59. Which of the following is a correct statement
(1) CN^- represent a bidentate ligand
(2) EAN of Fe in $K_3[Fe(CN)_6]$ conicides with noble gas
(3) $C_2O_4^{2-}$ acts as a chelating ligand
(4) All of these

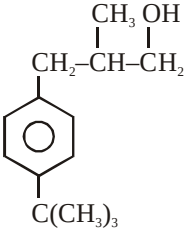
60. Which of the following is incorrect trend:
(1) $SiO_2 > GeO_2 < SnO_2 < PbO_2$ (Basic strength)
(2) $H_2O > H_2S > H_2Se > H_2Te > H_2Po$ (Thermal stability)
(3) HCl < HBr < HI (Acidic strength)
(4) All of these are correct

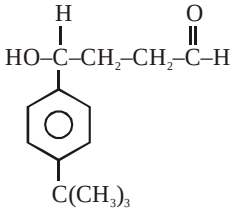
61. Which of the following halide of silver is soluble in water
(1) AgF (2) AgBr
(3) AgCl (4) AgI

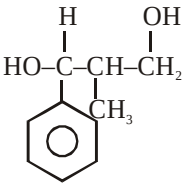
62. Which of the following is not related with Bakelite
(1) Novolac (2) Phenol
(3) Acetaldehyde (4) Formaldehyde

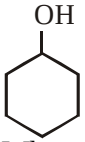
63. 

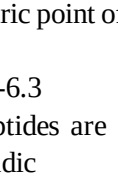
$\xrightarrow[CH_2Cl_2]{PCC} A \xrightarrow[aldol]{Propanal/OH^-} B \xrightarrow{H_2,Pd-Charcoal} C$
Structure for C is:
(1) 

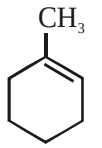
(2) 

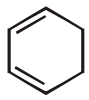
(3) 

(4) 

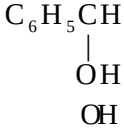
64. 

$\xrightarrow{H_2CrO_4} A \xrightarrow[(ii)H_3O^+]{(i)CH_3MgI} B \xrightarrow[heat]{H^+} C$.
Where C is an alkene. Structure for C is:
(1) 

(2) 

(3) 
(4) 

65. $HO-CH_2CH_2-Cl \xrightarrow{1\text{ mole NaCN}} A \xrightarrow{H_3O^+} B$. B in the above reaction is
(1) CH_3CH_2COOH
(2) $Cl–CH_2–CH_2COOH$
(3) $HOOC–CH_2CH_2COOH$
(4) $HO–CH_2CH_2COOH$

66. $C_6H_5-\underset{\underset{O}{\|}}{C}-H + CH_3NO_2 \xrightarrow{OH^-} A \xrightarrow{Fe/HCl} B$
The product B in the above reaction is:
(1) $C_6H_5CH_2CH_2NO_2$
(2) $C_6H_5CH=CHNH_2$
(3) 

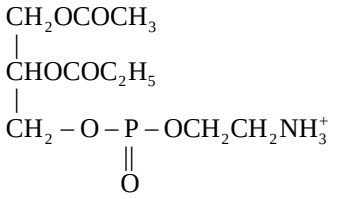
(4) $C_6H_5-\underset{\underset{OH}{|}}{CH}-CH_2-NO_2$

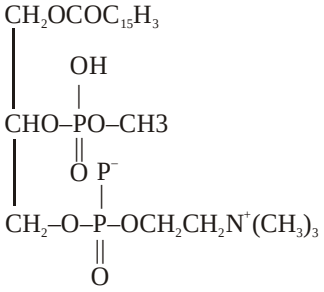
67. The oxidation state of sulphur in acids $H_2S_2O_8$, $H_2S_2O_4$ and H_2SO_3 follows the order
(1) $H_2S_2O_8 < H_2S_2O_4 < H_2SO_3$
(2) $H_2S_2O_8 > H_2S_2O_4 > H_2SO_3$
(3) $H_2S_2O_4 > H_2S_2O_8 > H_2SO_3$
(4) $H_2S_2O_8 > H_2SO_3 > H_2S_2O_4$

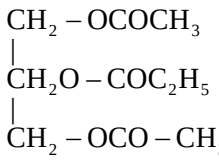
68. A solution of acetic acid is 0.1M. To what volume at 25°C must 1 dm^3 of this solution be diluted to double the pH ($Ka = 10^{-5}$)
(1) $2dm^3$
(2) $10dm^3$
(3) 10^6dm^3
(4) 10^8dm^3

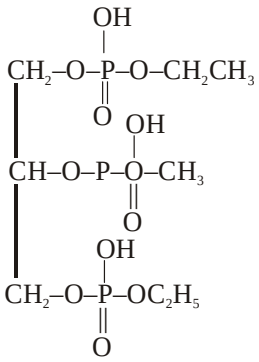
69. The dissociation of solid NH_4HS in a closed container given by reaction,
$NH_4HS(s) \rightleftharpoons NH_3(g) + H_2S(g)$
The total pressure 'p' is related to K_p as
(1) $k_p = p^2$
(2) $kp = \sqrt{p}$
(3) $k_p = \frac{p^3}{2}$
(4) $k_p = \frac{p^2}{4}$

70. Which one of these is an example of phospholipids:

(1) 

(2) 

(3) 

(4) 

71. According to the IUPAC nomenclature Zeise's salt is named as:

(1) erichloro etheneplatinale (II)

(2) η-trochloroetheneplatinate (II)

(3) trichloro-η-etheneplatinate(II)

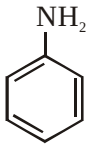
(4) trichloroetheneplatinate (IV)

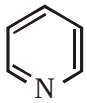
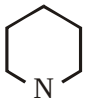
72. 20 ml of CO was mixed with 50 mL of oxygen and the mixture was exploded. On cooling, the resulting mixture was shaken with KOH. The gas left as residue is:

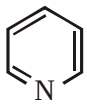
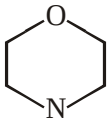
(1) O_2, 10 mL (2) CO, 10 mL

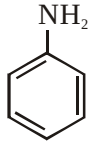
(3) O_2; 25 mL (4) O_2, 40 mL

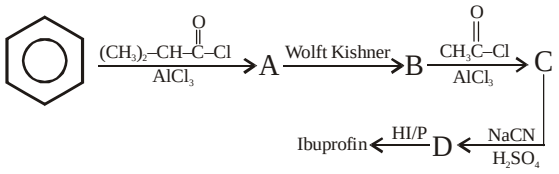
73. Which of the following statement is correct

(1)  is more basic than  due to greater resonance in aniline

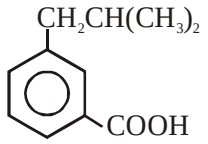
(2)  is less basic than  due to conjugation possible in pyridine

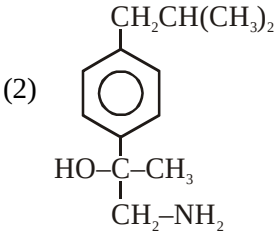
(3)  is less basic than  as N in pyridine is sp^2 hybridised

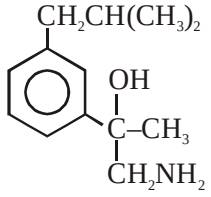
(4)  is more basic than methanamine due to resonance

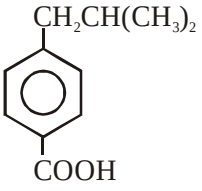
74. 

The structure of ibupfrofin is:

(1) 

(2) 

(3) 

(4) 

75. Which of the following statement is incorrect for transition elements?

(1) Oxides of transition metal in lowest oxidation state is basic where as highest oxidation state is usually acidic

(2) The transition metal usually exhibits higher oxidation states in its flourides than in its iodides

(3) The halides become more susceptible to hydrolysis with increase in oxidation state

(4) Carbonyl complexes of early transition elements is more stable than complexes of later transition elements

76. Which of the following show paramagnetism?

(1) O_2 and Cl_2O_7 (2) Cl_2O_7 only

(3) O_2 and ClO_3 (4) O_2 only

77. Which of the following is wrongly matched?

(1) $[Fe(H_2O)_6]^{2+} \rightarrow sp^3d^2$

(2) $[Co(NH_3)_6]^{3+} \rightarrow d^2sp^3$

(3) $[Ni(CN)_4]^{2-} \rightarrow sp^3$ (4) $[Ni(CO)_4] \rightarrow sp^3$

78. Which of the following compound does not exist?

(1) EuO_2 (2) CeO_2

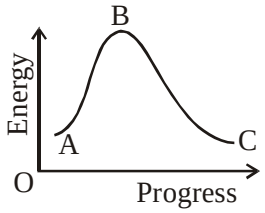
(3) EuO (4) YbC_2

79. In a DNA the AT/GC ratio is 0.8. If number of moles of adenine in its DNA sample are 40,000, the number of moles of cyanine present is

(1) 10,00,000 (2) 500,00

(3) 40,000 (4) 80,000

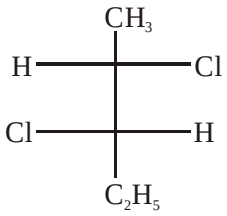
80. For the given graph what is ratio of enthalpy change to activation energy of forward reaction



(1) $\frac{AB}{BC}$ (2) $\frac{AC}{AB}$

(3) $\frac{AB}{AC}$ (4) $\frac{BC}{AC}$

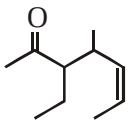
81. The absolute confugaration of following compound is



(1) 2S, 3R (2) 2R, 3S

(3) 2S, 3S (4) 2R, 3R

82. What is the correct IUPAC name of the given compound



(1) 2-Oxo-3-ethyl-4-methyl-heptanone

(2) 3-Ethyl-4-methylhept-5-en-2-one

(3) 3-Ethyl-4-methylhept-2, 5-enone

(4) 4-Methyl-5-ethylhept-2-en-6-one

83. Zeolites are shape selective catalyst in which the size of pores are

(1) 260 pm-740 pm (2) 300–900 pm

(3) 1Å–3Å (4) 500 nm – 700 nm

84. A galvanic cell consists of a metallic zinc plate immersed in a 0.1 M $Zn(NO_3)_2$ solution and metallic plate of lead in 0.02 M $Pb(NO_3)_2$ solution. What is the emf of the cell : (Given $E^{\circ}_{Zn^{2+}|Zn} = -0.76V$, $E^{\circ}_{Pb^{2+}|Pb} = -0.13V$)

(1) 0.9V (2) 1.9V

(3) 0.61V (4) 9.1V

85. Arrange the given compound in increasing order of their reactivity towards HCN

(I) Acetaldehyde

(II) Acetone

(III) Di-tert-butyl ketone

(IV) Tert-Butyl methyl ketone

(1) IV < II < III < I

(2) I < II < III < IV

(3) III < IV < II < I

(4) II < III < IV < I

86. When 1, 3-Dibromo propane is subjected to elimination reaction in the presence of Zn dust, it forms cyclopropane and it is a type of ..... elemination.

(1) α (2) β

(3) γ (4) η

87. $_{90}Th^{234}$ disintegrates to give $_{82}Pb^{206}$ as the final product. How many α and β particles are emitted during the process?

(1) $8\alpha, 6\beta$

(2) $6\alpha, 8\beta$

(3) $7\alpha, 6\beta$

(4) $6\beta, 7\alpha$

88. For the given reaction,

$N_2(g) + O_2(g) \rightarrow 2NO(g)$

Enthalpy change and entropy change are 180.8 kJ mol^{-1} and 24.7 $JK^{-1}mol^{-1}$ respectively. At what temperature the reaction will be spontaneous

(1) 7000 K (2) 8000 K

(3) 6000 K (4) 5000 K

89. A first order reaction is completed 50% in 6 seconds, what is the time taken to complete 99.9% of the reaction.

(1) 60 minutes (2) 1 minute

(3) 50 seconds (4) 36 seconds

90. For the fuel cell reaction:

$2H_2 + O_2 \rightarrow 2H_2O;\ E^{\circ}_{cell} = 1.23V$

What is value of ΔG° ?

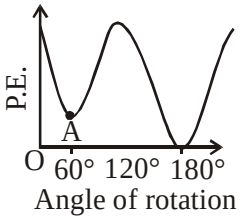
(1) +237.39 kJ

(2) –237.39

(3) –474.78

(4) 474.78

91. In the given graph point A represents ..... conformation of n-butane



(1) Eclipsed

(2) Gauche

(3) Anti

(4) Staggard

92. One mole each of PCl_5, Cl_2 and PCl_3 are taken in a one litre flask at 400 K. At equilibrium 1.5 moles of PCl_3 are found. What is the value of equilibrium constant

(1) 1.5

(2) 2.25

(3) 4.5

(4) 1.05

93. If enthalpies of combustion of graphite and diamond are –94.05 and –94.50 kcal respectively. What is the heat change during the reaction if 10g of graphite converts into diamond

(1) 4.5 kcal

(2) 0.45 kcal

(3) 0.375 kcal

(4) 37.5 kcal

94. Which of the following anion is weakest base:

(1) NO_3^-

(2) F^-

(3) CH_3COO^-

(4) OH^-

95. Which of the following statement is incorrect:

(1) Hyper conjugation is interaction between empty p-orbital and adjacent σ-bond

(2) Ethyl group is +I group where as cyanide is –I group

(3) CHO-group is o, p directing group

(4) –COOH is metadirecting

96. Which of the following organometallic compound is π-bonded

(1) Tetramethylsilane

(2) Trimethylarsane

(3) Biphenyl chromium

(4) Dimethyl magnesium

97. What is the difference in standard heat of combustion of ethane at constant volume and at constant pressure $(\Delta E - \Delta H)$

(1) $-\frac{3}{2}RT$

(2) $-\frac{5}{2}RT$

(3) $\frac{3}{2}RT$

(4) $\frac{5}{2}RT$

98. In closed packed structure of a mixed oxide, O^{2-} is packed in cubic close packing arrangement, one half of the octahedral voids are occupied by A^{3+} and one eighth of tetrahedral voids are occupied by B^{2+}. What is the formula of the compound

(1) $A_2B_3O_4$

(2) $A_3B_2O_4$

(3) A_2BO_4

(4) A_2BO_3

99. $C_2H_6(g) + 3.5O_2(g) \rightarrow 2CO_2(g) + 3H_2O(g)$

$\Delta S_{vap}(H_2O, l) = x_1 \text{cal } K^{-1}$ (b.p.T_1)

$\Delta H_f(H_2O, l) = x_2$, $\Delta H_f(CO_2) = x_3$,

$\Delta H_f(C_2H_6) = x_4$; Hence ΔH_f for the reaction is

(1) $2x_3+3x_2-x_4$

(2) $2x_3+3x_2-x_4+3x_1T_1$

(3) $2x_3+3x_2-x_4-3x_1T_1$

(4) $x_1T_1+x_2+x_3-x_4$

100. In which of the following medium Ag_2CrO_4 is most soluble. Given Ksp of Ag_2CrO_4 is 1.1×10^{-12}

(1) H_2O

(2) $1M AgNO_3$

(3) $1M K_2CrO_4$

(4) Can not predicted

BOTANY

101. The electron carrier molecules Co Q and cytochrome C
   (1) Are reduced as they pass electron on to the next molecule
   (2) Contain heme as prosthetic group
   (3) Shuttle protons to ATP synthase
   (4) Are mobile carrier that transfer electrons between the electron carrier complexes

102. Which of the following statement is incorrect ?
   (1) The diffusion of any substance across a membrane depends on its solubility in lipids, the major constituent of membrane
   (2) A concentration gradient must already be present for molecules to diffuse even if facilitated by proteins
   (3) Facilitated diffusion can cause net transport of molecules from a low to a high concentration
   (4) In facilitated diffusion special proteins help move substance across membranes without expenditure of ATP energy

103. If a pressure greater than atmospheric pressure is applied to pure water or solution
   (1) Its water potential decreases
   (2) Its water potential increases
   (3) Water potential tends to zero
   (4) No change in water potential

104. The apoplast is the system of adjacent cell walls that is continuous throughout the plant, except at
   (1) Pericycle (2) Hypodermis
   (3) Casparian strips of endodermis
   (4) Inner part of cortex

105. Which of the following statement is incorrect ?
   (1) Photosynthesis is limited by available water which can be swiftly depleted by transpiration
   (2) The evolution of the C_4 photosynthetic system is probably one of the strategies for maximising the availability of CO_2 while minimising water loss
   (3) C_4 plants are twice as efficient as C_3 plants in terms of fixing carbon
   (4) C_4 plants loses as much water as C_3 plant for the same amount of CO_2 fixed

106. Element that is structural component and is not remobilised from part of plant is
   (1) Phosphorus (2) Sulphur
   (3) Nitrogen (4) Calcium

107. The stroma lamellae membrane lacks
   (1) PS - I (2) PS - II
   (3) NADP reductase enzyme
   (4) PS II and NADP reductase enzyme

108. Which of the following statement related to factors affecting photosynthesis is incorrect ?
   (1) Increase in incident light beyond a point causes the breakdown of chlorophyll and a decrease in photosynthesis
   (2) Increase in concentration upto 0.05 per cent can cause an increase in CO_2 fixation rates
   (3) Light reactions are affected by temperature to high extent than dark reaction
   (4) Water stress causes the stomata to close hence reducing the CO_2 availability

109. In the chemiosmotic mechanism
   (1) ATP production is linked to the proton gradient established by the electron transport chain
   (2) The difference in pH between the intermembrane space and cytosol drives the formation of ATP
   (3) The flow of H^+ through ATP synthases from the matrix to the intermembrane space drives the phosphorylation of ADP
   (4) The energy released by the reduction and subsequent oxidation of components of the electron transport chain is transferred as a phosphate to ADP

110. Which one of the following pairs is not correctly matched ?
   (1) Cytokinin – Cell division
   (2) IA – Cell wall elongation
   (3) Abscissic acid – Stomatal closure
   (4) Gibberellic acid – Leaf fall

111. Which of the following statement for taxonomic hierarchy is incorrect ?
   (1) As we go higher from species to kingdom, the number of common characteristics goes on decreasing
   (2) Lower the taxa, more are the characteristics that the members within the taxon share
   (3) Category at any level share equal number of common characteristics
   (4) Higher the category, greater is the difficulty of determining the relationship to other taxa at the same level

112. Taxonomical aid based on the contrasting characters generally in a pair called couplet is
(1) Manuals (2) Monographs
(3) Catalogues (4) Key

113. Archaebacteria can survive in extreme conditions since
(1) It lacks cell wall structure
(2) It have different cell wall structure than other bacteria
(3) They frequently produce spores
(4) The colonies are generally surrounded by gelatinous sheath

114. Find out the incorrectly matched pair :
(1) Phycomycetes – *Rhizopus*
(2) Ascomycetes – *Penicillium*
(3) Basidiomycetes – *Alternaria*
(4) Deuteromycetes – *Colleotrichum*

115. Aplanospores are
(1) Motile spores endogenously produced in sporangium
(2) Non-motile spores endogenously produced in sporangium
(3) Non-motile spores endogenously present in sac like asci
(4) Non-motile spore exogeneously produced on the basidium

116. Gelatinous coating of algin on the cellulosic wall is commonly found in
(1) Chlorophyceae (2) Phaeophyceae
(3) Rhodophyceae (4) Blue green algae

117. Oogamous type of sexual reproduction takes place in which of the following ?
(1) *Spirogyra* (2) *Volvox*
(3) *Fucus* (4) Both (2) & (3)

118. In mango the fruit is drupe developing from
(1) Monocarpellary inferior ovaries
(2) Multicarpellary inferior ovaries
(3) Multicarpellary inferior ovaries
(4) Monocarpellary superior ovaries

119. Type of placentation in which ovary is unilocular and ovules are borne on periphery is
(1) Axile placentation (2) Marginal placentation
(3) Parietal placentation (4) Basal placentation

120. Pneumatophores in rhizophore are meant for
(1) Absorption of moisture from the atmosphere
(2) Special structure for transpiration
(3) Getting oxygen for respiration
(4) Structure for storage of food

121. Opposite phyllotoxy is seen in
(1) *Calotropis* (2) *Alstonia*
(3) *Brassica compestris* (4) *Helianthus annus*

122. Which of the following statement about *Cycas* is incorrect ?
(1) Its roots contain some blue green algae
(2) It does not have a well organised female flower
(3) It has circinate vernation
(4) Its xylem is mainly composed of xylem vessels

123. Which of the following statement is incorrect ?
(1) The functions of sieve tubes are controlled by the nucleus of companion cells
(2) The companion cells help in maintaining the pressure gradient in the sieve tubes
(3) The phloem parenchyma stores food material and other substances like resins, latex and mucilage
(4) Phloem fibres are generally present in primary phloem and absent in the secondary phloem

124. Which of the following is not correct for monocot leaf ?
(1) It is isobilateral (2) It is amphistomatic
(3) Mesophyll not differentiated and all cells are like spongy parenchyma
(4) Above and below the large vascular bundles, patches of parenchymatous or collenchymatous cells are present

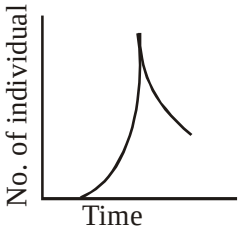
125. Phellogen cuts off cells on both sides, the outer cells differentiate into
(1) Cork cambium (2) Phellem
(3) Phelloderm (4) Secondary cortex

126. Which of the following is not water pollinated plant?
(1) *Vallisneria* (2) *Hydrilla*
(3) *Zostera* (4) Water lily

127. If the chromosome number of plant species is 18n what would be the chromosome number of microspore mother cell ?
(1) 18 (2) 9
(3) 27 (4) 16

128. Conformers are those which
(1) Ensures constant body temperature and constant osmotic concentration
(2) Changes its body temperature and osmotic concentration according to the ambient body temperature and osmotic concentration
(3) Which changes its body temperature according to environment to some extent and then later maintain constant body temperature
(4) Always migrate in response to adverse environmental condition

129. The below diagram shows J-shaped growth form which is represented by



(1) $\frac{dN}{dt} = rN$ (2) $\frac{dN}{dt} = rNK$

(3) $\frac{dN}{dt} = rN\left(\frac{K}{N}\right)$ (4) $\frac{dN}{dt} = rN\left(\frac{K-N}{K}\right)$

130. A biologist studied the population of rats in a barn. He found that the average natality was 520, average mortality 500. Immigration 35 and emigration 55 per year. If at the start of investigation these were 40 rats, how many would these be at the end of 10 years ?

(1) 20 (2) 40

(3) 60 (4) 80

131. Which of the following is the limitations of ecological pyramids ?

(1) It does not take into account the same species belonging to two or more trophic levels

(2) Saprophytes are not given any place in ecological pyramids

(3) It does not accomodate food web

(4) All of these

132. Which of the following is not true for decomposition ?

(1) The rate of decomposition is controlled by chemical composition of detritus and climatic factors

(2) Decomposition rate is slower if detritus is rich in lignin and chitin

(3) Decomposition rate is quicker if detritus is rich in nitrogen and sugars

(4) High temperature and aerobiosis inhibit decompostion

133. If the length of E.coli DNA is 1.36 mm. The number of base pairs in E. coli is:

(1) 4×10^6 bp (2) 3×10^6 bp

(3) 6.6×10^9 bp (4) 2×10^6 bp

134. Which of the following statement is incorrect ?

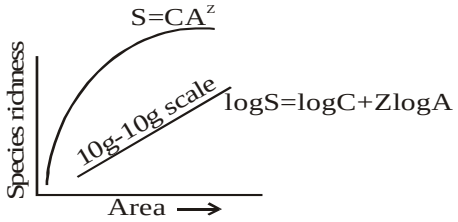
(1) $2'$-OH group present at every nucleotide in RNA is a reactive group and makes RNA labile and easily degradable

(2) Viruses having RNA genome and having shorter life span mutate and evolve faster

(3) For the transmissions of genetic information DNA is better genetic material them RNA

(4) The presence of thymine at the place of uracil also confers additional stability to DNA

135. The relation ship between species - Area is given in following graph as



What is the value of regression coefficient if very large areas like the entire continent is taken into consideration :

(1) 0.1 to 0.2

(2) 0.6 to 1.2

(3) 1 to 2

(4) 1.2 to 1.5

136. Extinction of species like steller's sea cow, passanger pigeon is due to:

(1) Habitat loss

(2) Over exploitation by humans

(3) Alien species invasion

(4) Co-extinction

137. Bioprospecting is:

(1) Evaluation of alien species invasion

(2) Exploring molecular, genetic and species level diversity for products of economic importance

(3) Evaluation of endangered species

(4) Evaluation of threatened species

138. Find out the wrong statement regarding RNA interference (RNAi)

(1) It takes place in all eukaryotic organism as a method of cellular defence

(2) This method involves silencing of all mRNA

(3) The source of this RNA could be from transposons

(4) It is used to control *Meloidegyne incognita* infecting the roots of tobacco.

139. Which of the following is not the method of early diagnosis of disease?
(1) PCR
(2) Recombinant DNA technology
(3) ELISA
(4) Serum analysis

140. Which of the following gene in introduced in Bt cotton to protect the same from cornborer ?
(1) Cry IAC
(2) Cry II Ab
(3) Cry IAb
(4) Cry IAd

141. Large holes in 'swiss cheese' are due to production of a large amount of CO_2 by a bacterium named
(1) *Propionibacterium sharmanii*
(2) *Lactobacillus bulgaricus*
(3) *Acetobacter aceti*
(4) *Methanococcus*

142. Methodology used in HGP uses two approaches, one approach focussed on identifying all the genes that expressed as RNA, referred to as
(1) Sequence annotation
(2) Expressed sequence tags
(3) Single nucleotide polymorphism
(4) Minisatellite

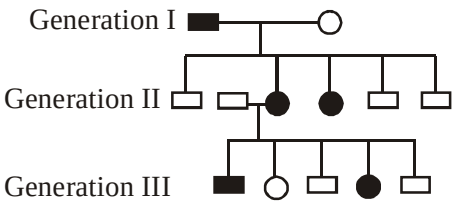
143. Which variety of Brassica (rapeseed mustard) is resistant to Aphids (insect pests)
(1) Pusa Gaurav
(2) Pusa sem2
(3) Pusa sem 3
(4) Pusa sowani

144. *Spirullina* is
(1) Biofertilizer
(2) Biopesticide
(3) Edible fumgus
(4) Single cell protein

145. RNA polymerase III is responsible for transcription of
(1) 28s rRNA
(2) 18s rRNA
(3) 5s rRNA
(4) mRNA

146. Tallpurple variety of peaplant was crossed with dwarf white plant. What is the probability of getting phenotypes tall purple in F_2 generation ?
(1) $\frac{3}{16}$
(2) $\frac{1}{16}$
(3) $\frac{9}{16}$
(4) $\frac{8}{16}$

147. Given below is a pedigree, chart with symbols for sex-linked trait in human



▭ Uneffected male
○ Uneffected female
■ Affected male
● Affected female

The trait of the above pedigree chart is
(1) Recessive Y-linked (2) Recessive X-linked
(3) Dominant Y-linked (4) Dominant X-linked

148. Match the following

(i) Down syndrome	(a) XXY
(ii) Klinefelter'syndrome	(b) XO
(iii) Turner's syndrome	(c) Trisomy of 21 chromosome

(1) i-a, ii-b, iii-c
(2) i-c, ii-a, iii-b
(3) i-a, ii-c, iii-b
(4) i-c, ii-b, iii-a

149. There are several records of very old yet viable seeds, the oldest is that of
(1) *Lupinus arcticus*
(2) *Phoenix dactylifera*
(3) *Ficus*
(4) *Orobanche*

150. The intine is made up of
(1) Pectin
(2) Pecto-cellulose
(3) Callose
(4) Sporopollenin

ZOOLOGY

151. Spermatogenesis starts at the age of puberty due to
(1) GnRH (2) Estrogen
(3) GH (4) Progesterone

152. For normal fertility the least percent of the sperm which must show vigorous mortility should be
(1) 20 percent (2) 40 percent
(3) 30 percent (4) 50 percent

153. The primary oocyte becomes secondary oocyte after
(1) Completion of mitotic division
(2) Completion of first meiotic division
(3) Completion of second meiotic division
(4) Completion of prophase - I

154. The heart of embryo (human) is formed
(1) After 15 days of pregnancy
(2) After one month of pregnancy
(3) After two months of pregnancy
(4) After three months of pregnancy

155. Which of the following is non-medicated IUDs ?
(1) CuT (2) Cu7
(3) Multiload 375 (4) Lippes loop

156. Which of the following is correct for early earth ?
(1) Early earth contained hydrogen, water vapour, methane, carbon dioxide and ammonia
(2) Early earth contained water vapour, methane, oxygen, carbon dioxide and ammonia
(3) Early earth contained water methane, carbon dioxide and ammonia
(4) Early earth contained water vapour, methane carbon dioxide and ammonia

157. Which of the following is incorrect ?
(1) Inbreeding refers to the mating of more closely related individuals within the same breed
(2) Outcrossing is the practice of mating of animals within the smae breed, but having no common ancestors
(3) Cross-breeding refers to mating of superior males and females of different species
(4) Out-breeding includes mating two individuals of the same breed having no common ancestors

158. Which of the following are analogous structures?
(a) Bones of forelimbs of whales, bats, cheetah and human
(b) Thorn and tendrils of *Bougainvilea* and *Cucurbita*
(c) Eye of octopus and mammals
(d) Sweet potato and potato
(1) a & b (2) a & c
(3) b & c (4) c & d

159. Find the wrong statement out of the following statements
(1) No variant is completely wiped out
(2) Excess use of herbicides, pesticides etc. has only resulted in selection of resistant varieties in a much longer time scale
(3) Resistant organisms / cells are appearing in a time scale of months or years and not centuries
(4) Evolution is not a direct process in the sense of determinism

160. Branching descent is the key concept of
(1) Lamarck theory of evolution
(2) Darwinian theory of evolution
(3) Neo Lamarckism (4) Both (2) & (3)

161. Which of the following first used hides to protect their body and buried their dead ?
(1) *Homo habilis* (2) *Homo erectus*
(3) *Ramapithecus* (4) Neanderthal man

162. Mark the odd one out :
(1) Morphine (2) Codeine
(3) Heroin (4) Cocaine

163. 'Black water fever' is caused by
(1) *Plasmodium ovale*
(2) *Plasmodium falciparum*
(3) *Plasmodium malariae*
(4) *Plasmodium vivax*

164. Sexual phase in the life cycle of *Plasmodium* occurs in
(1) Body cavity of mosquito
(2) Gut of mosquito
(3) Blood of man
(4) Salivary glands of mosquito

165. The antibodies produced in response to allergens are
(1) IgA (2) IgE
(3) IgM (4) IgG

166. Statins produced by which of the following have been commercialised as blood-cholesterol lowering agents?
(1) *Trichoderma polysporum*
(2) *Monascus purpureus*
(3) *Aspergillus niger* (4) *Streptococcus*

167. ____ is the most feared property of malignant tumours
(1) Hyperstasis (2) Metastasis
(3) Parastasis (4) Parasitesis

168. Which of the following is incorrectly matched ?
(1) Murrah – Punjab
(2) Bhadawari – Madhya Pradesh
(3) Mehsana – Gujarat (4) Surti – Haryana

169. Which one of the following is a conjugak protein ?
(1) Albumin (2) Globulin
(3) Histone (4) Flavoprotein

170. Which of the following statement is incorrect ?
(1) The membrane of the erythrocyte has approximately 52% protein and 40% lipids
(2) The fluid nature of membrane is important for the formation of intercellular junction
(3) Phosphoglycerides, the main composition of middle lamella of cell wall gives the different neighbouring cells together
(4) Na^+/K^+ pump is an energy dependent process and aso is called active transport

171. Which of the following statement is irrelevant ?
(1) Flow of metabolites through metabolic pathways has a definite rate and direction
(2) There is no uncatalysed metabolic conversions in living systems
(3) The living state is a equilibrium steady state to be able to perform work
(4) Without metabolism there cannot be a living state

172. Which of the following is incorrect about sponges ?
(1) Sponges are hermaphrodite
(2) Chaonocytes line the spongocoel
(3) Digestion in sponges, occurs in spongocoel
(4) Development in sponge is indirect

173. The main factor for exchange of O_2 and CO_2 at the level of wall of alveoli is found to be
(1) Relative concentration
(2) Partial pressure
(3) Atmospheric pressure
(4) Hydrostatic pressure

174. The oxygen dissociation curve for tissues is found to shift more rightwardly if its
(1) pCO_2 is high but pO_2 is low
(2) Both pCO_2 and pO_2 are low
(3) pCo_2 low and pO_2 is high
(4) Both are high

175. A group of symptoms including acute chest pain due to insufficient supply of O_2 to heart muscles can be related to :
(1) Heart attack
(2) Heart failure
(3) Arterious clerosis
(4) Angina pectosis

176. The E.C.G. is related to electrical activity of heart chambers in which the P wave is related to :
(1) Repolorisation of Atria
(2) Depolarisation of Atria
(3) Repolarisation of ventricle
(4) Depolarisation of ventricle

177. The control of digestive enzymes by different parts of alimentary canal is under hormonal control found it is mainly by the hormones released from :
(1) Pituitary (2) Hypothalamus
(3) Pancreas
(4) Intestinal or gastric mucosa

178. Which of the following statement is incorrect in relation to cell cycle of a somatic cell :
(1) The G_0 phase is inactive stage representing a quiscent state
(2) The G_1 phase is an active phase for synthesis of different metabolites
(3) The metaphase works for pairing of the homologous so that all chromosomes will be symmetrical
(4) The anaphase works for breaking of the centromere of all chromosomes

179. The tertiary structure of protein is mainly related to :
(1) Calalytic activity (2) Helix formation
(3) Structural property of protein
(4) Chemical compatibility of protein

180. The part of the brain which can moderate the functions of the respiratory rhythm centre is
(1) Medulla (2) Cerebellum
(3) Pons (4) Hypothalamus

181. Choose the correct statement :
(1) The alternation of generation between polyp and medusa called metagenesis is seen in *Aurelia*
(2) Polyps produce medusa sexually and medusa form the polyps asexually
(3) Metagenesis is shown by *Obelia* and *Adamsia*
(4) In *Obelia* polyp is sessile while medusae is free swimming

182. Which of the following is correctly matched ?

a.	*Physalia*	(i)	Brain coral
b.	*Pennatula*	(ii)	Sea anemone
c.	*Adamsia*	(iii)	Portugese man-of-war
d.	*Gorgonia*	(iv)	Sea-fan
e.	*Meandrina*	(v)	Sea-pen

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

183. In one cockroach if the arolium and plantulae of all the legs were removed what will happen
(1) It cannot walk on smooth surface
(2) It cannot walk on rough surface
(3) It will not be able to move at all
(4) Nothing will happen

184. Choose the incorrect statement about non-chordates:
(1) Notochord is absent
(2) Central nervous system is ventral, solid and single
(3) Heart is dorsal (4) Gill slits are absent

185. The function of eustachian tube is
(1) To increase the efficiency of transmission of sound waves
(2) To connect cochlear duct with vestibular apparatus
(3) To equalise the pressure on either side of the eardrum
(4) To maintain the body balance

186. ANF is a hormone secreted by atrial wall to
(1) Decreases blood pressure
(2) Increases blood pressure
(3) Decreases blood pressure when it is high and increases when it is low
(4) Causes constrictionof blood vessels

187. Which of the following helps cells in communicating with each other ?
(1) Tight junction (2) Adhering junctions
(3) Gap junctions (4) Both (1) & (3)

188. Lateral line organs do not occur in
(1) Cartilaginous fishes (2) Bony fishes
(3) Amphibian larvae (4) Adult reptile

189. Pneumatic bones are found in
(1) *Columba* (2) *Calotes*
(3) *Ichthyophis* (4) *Pteropus*

190. Which of the following does not take part in secretion?
(1) Squamous epithelium (2) Columnar epithelium
(3) Cuboidal epithelium (4) Both (1) & (3)

191. The amount of blood filtered by the kidneys per minute constitute roughly
(1) 1/5th of the blood pumped out by each ventricle of the heart
(2) 1/6th of the blood pumped out by each ventricle of the heart
(3) 1/4th of the blood pumped out by each ventricle of the heart
(4) 1/7th of the blood pumped out by each ventricle of the heart

192. Tube feet is a cgharacteristic feature of
(1) Cray fish (2) Star fish
(3) Cuttle fish (4) Jelly fish

193. Basal lamina has
(1) Type IV collagen fibril (2) Type III collagen fibril
(3) Type I collagen fibril (4) Type II collagen fibril

194. Which of the following enzyme is an amino acid derivative ?
(1) Hypothalamic hormones
(2) Glucagon
(3) Estradiol (4) Epinephrine

195. Tongue remains attached to floor of buccal cavity by
(a) Frenulum (b) Philthrum
(c) Epiglottis (d) Lacteal

196. Which of the following hormones support the process of red blood cell formation ?
(1) Thymocin (2) Thyroid hormone
(3) Melatonin (4) Parathormone

197. In which of the following animal nerve cell is present but brain is absent
(1) Hydra (2) Sponge
(3) Cockroach (4) Earthworm

198. Which of the following is correctly match ?
(1) *Exocoetus* – Flying fish
(2) *Ichthyophis* – Tree frog
(3) *Pristis* – Saw fish (4) *Scoliodon* – Dog fish

199. Epithelium of serosa is called
(1) Mesothelium (2) Endothelium
(3) Transitional epithelium (4) Mesovarium

200. Chemical studies on which of the following cells enabled the scientists to deduce the possible structure of plasma membrane ?
(1) Nerve cells (2) Epithelial cells
(3) Blood cells (4) Germ cells