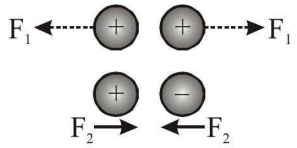
1. If a body is charged by rubbing it. Its weight:-
(1) always decreases slightly
(2) always increases slightly
(3) may increase slightly or may decrease slightly
(4) remains precisely the same

2. A polythene piece rubbed with wool is found to have negative charge of 3.2×10^{-7}C. Calculate the number of electrons transferred from wool to polythene.
(1) 2×10^{12} (2) 3×10^{19}
(3) 10^{13} (4) 10^{18}

3. In two cases, two identical conducting spheres are given equal charges, in one case of the same type whereas in another case of opposite type. The distance between the spheres is not large comparing with the diameter. Let F_1 and F_2 be the magnitude of the force of interaction between the spheres, as shown, then :-



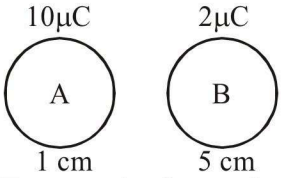
(1) $F_1 > F_2$
(2) $F_1 = F_2$
(3) $F_1 < F_2$
(4) information is not sufficient to draw the conclusion

4. Two equally charged, identical metal spheres A and B repel each other with a force 'F'. The spheres are kept fixed with a distance 'r' between them. A third identical, but uncharged sphere C is brought in contact with A and then placed at the mid-point of the line joining A and B. The magnitude of the net electric force on C is :-
(1) F (2) 3F/4 (3) F/2 (4) F/4

5. Two charges +4e and +e are fixed at distance x apart. At what distance, a charge q must be placed from +e so that it is in equilibrium :-
(1) x/2 (2) 2x/3 (3) x/3 (4) x/6

6. Force of attraction between two point electric charges placed at a distance d in a medium is F. What distance apart should these be kept in the same medium, so that force between them becomes F/3 ?
(1) $2\sqrt{3}$d (2) 3d (3) 9d (4) $\sqrt{3}$d

7.



Two metal spheres of radius 1 cm and 5 cm has charge 10μC and 2μC respectively. If they are connected by wire then find amount of charge transferred through wire :-
(1) 2μC (2) 8μC (3) 6μC (4) 5μC

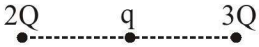
8. Two identical metal spheres having charge 3Q and Q are placed at certain distance. Force between then is F. Now spheres are brought in contact and then seperated by same distance find new force between them :-
(1) 2F (2) 4F (3) $\frac{4F}{3}$ (4) $\frac{F}{3}$

9. Two charged particles are placed in air at a distance of 1.6Å then which of following value of force can not be possible :-
(1) 8×10^{-11} N (2) 9×10^{-9} N
(3) 18×10^{-9} N (4) 54×10^{-9} N

10.

Force on –3μC will be :-
(1) $\frac{3}{2}\sqrt{6}(\hat{i}+2\hat{j}-\hat{k})\times10^{-3}$N
(2) $3\sqrt{6}(\hat{i}+2\hat{j}-\hat{k})\times10^{-3}$N
(3) $\frac{3}{2}\sqrt{6}(-\hat{i}-2\hat{j}+\hat{k})\times10^{-3}$N
(4) $\sqrt{6}(\hat{i}+2\hat{j}-\hat{k})$N

11.



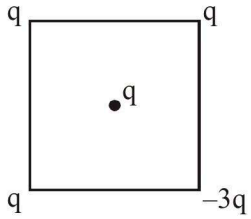
Three particles are placed on a line charge q placed at mid point. If net force on 2Q is zero than find value of q :-
(1) $-\frac{3}{2}$Q (2) $\frac{3}{4}$Q (3) $\frac{-3}{4}$Q (4) $\frac{-Q}{q}$

12. How many electrons are contained in $-2\mu C$ charge :-

(1) 2.5×10^{13} (2) 1.5×10^{11}

(3) 1.0×10^{10} (4) 1.25×10^{13}

13.



Four point charge are placed at corner of square of side a. A fifth charge q is at centre. Find net force on q at centre :-

(1) zero (2) $\frac{8kq^2}{a^2}$

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

14. How long after the beginning of motion is the displacement of a harmonically oscillating point equal to one half its amplitude, if the period is 24 sec and initial phase is zero ?

(1) 12 sec (2) 2 sec (3) 4 sec (4) 6 sec

15. The KE and PE of a particle executing SHM with amplitude A will be equal when its displacemen is:-

(1) $A\sqrt{2}$ (2) A/2

(3) $A/\sqrt{2}$ (4) $A\sqrt{2/3}$

16. Which one of the following satements is true for the speed u and the acceleration a of a particle executing simple harmonic motion ?

(1) When u is maximum, a is maximum

(2) Value of a is zero, whatever may be the value of u

(3) When u is zero, a is zero

(4) When u is maximum, a is zero

17. A simple pendulum is made of a body when is a hollow sphere containing mercury suspended by means of a wire. If a little mercury is drained off, the period of pendulum will :-

(1) remain unchanged (2) increase

(3) decrease (4) become erratic

18. For a particle executing simple harmonic motion, the kinetic energy K is given by : $K = K_0 \cos^2\omega t$. The maximum value of potential energy is :-

(1) K_0 (2) zero

(3) $K_0/2$ (4) $K_0/4$

19. When a particle oscillates simple harmonically, its kinetic energy varies periodically. If frequency of the particle is f, the frequency of the kinetic energy is :-

(1) f/2 (2) f (3) 2f (4) 4f

20. A heavy brass sphere is hung from a spring and it executes vertical vibrations with period T. The sphere is now immersed in a non-viscous liquid with a density (1/10)th that of brass. When set into vertical vibrations with the sphere remaining inside liquid all the time, the time period will be:-

(1) $\sqrt{9/10}T$ (2) $\sqrt{10/9}T$

(3) (9/10)T (4) unchanged

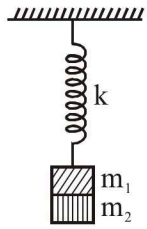
21. Two masses m_1 and m_2 are suspended otgether by a massless spring of contant k. When the masses are in equilibrium m_1 is removed without disturbing the system; the amplitude of vibration is :-

(1) m_1g/k

(2) m_2g/k

(3) $\frac{(m_1+m_2)g}{k}$

(4) $\frac{(m_2-m_1)g}{k}$



22. A particle at the end of a spring executes simple harmonic motion with a period t_1, while the corresponding period for another spring is t_2. If the period of oscillation with the two springs in series is T, then :-

(1) $T = t_1 + t_2$ (2) $T^2 = t_1^2 + t_2^2$

(3) $T^{-1} = t_1^{-1} + t_2^{-1}$ (4) $T^{-2} = t_1^{-2} + t_2^{-2}$

23. Two equal masses connected with springs of constants k_1 and k_2 have equal highest velocities, when executing SHM. Then, the ratio of their amplitudes will be :-

(1) k_1/k_2 (2) $(k_1/k_2)^{1/2}$

(3) k_2/k_1 (4) $(k_2/k_1)^{1/2}$

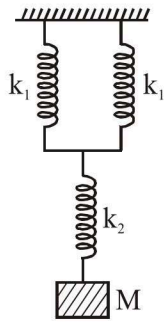
24. What will be the force constant of the spring system shown in the figure :-

(1) $\frac{k_1}{2}+k_2$

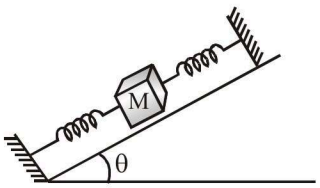
(2) $\left[\frac{1}{2k_1}+\frac{1}{k_2}\right]^{-1}$

(3) $\frac{1}{2k_1}+\frac{1}{k_2}$

(4) $\left[\frac{2}{k_1}+\frac{1}{k_2}\right]^{-1}$



25. On a smooth inclined plane, a body of mass M is attached between two springs. The other ends of the springs are fixed to firm supports. If each spring has force constant k, the period of oscillation of the body is : (assuming the springs as massless)



(1) $2\pi(M/2k)^{1/2}$ (2) $2\pi(2M/k)^{1/2}$

(3) $2\pi(Mg \sin \theta/2k)$ (4) $2\pi(2Mg/k)^{1/2}$

26. A particle is executing simple harmonic motion with an amplitude of 4 cm. At the mean position the velocity of the particle is 10 cm/sec. The distance of the particle from the mean position when its speed becomes 5 cm/s is :-

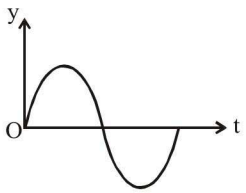
(1) $\sqrt{3}$cm (2) $\sqrt{5}$cm

(3) $2\sqrt{3}$cm (4) $2\sqrt{5}$cm

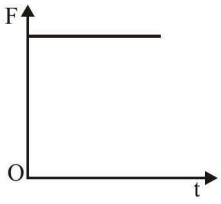
27. The displacement-time equation of a particle executing SHM is : $x = A \sin(\omega t + \phi)$. At time $t = 0$, position of the particle is $x = A/2$ and it is moving along negative x-direction. Then, the angle ϕ can be:-

(1) $\frac{\pi}{6}$ (2) $\frac{\pi}{3}$ (3) $\frac{2\pi}{3}$ (4) $\frac{5\pi}{6}$

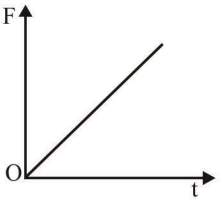
28. The displacement time graph of a particle execduting SHM is as shown in the figure. The corresponding force-time graph of the particle is:-



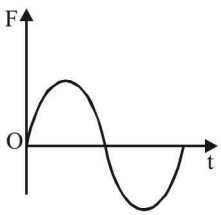
(1)



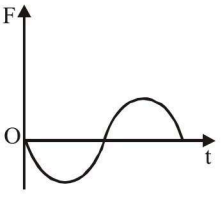
(2)



(3)



(4)



29. The potential energy of a particle of mass 1 kg in motion along the x-axis is given by : $U = 4(1 - \cos 2x)$J, where x is in metres. The period of small oscillations (in sec) is :-

(1) 2π (2) π (3) $\frac{\pi}{2}$ (4) $\sqrt{2}\pi$

30. A mass M is susnded from a spring of negligible mass. The spring is pulled a little and then released, so that the mass executes SHM of time period T. If the mass is increased by m, the time period becomes 5T/3. The ratio of m/M is :-

(1) $\frac{5}{3}$ (2) $\frac{3}{5}$ (3) $\frac{16}{9}$ (4) $\frac{25}{9}$

31. Starting from the origin, a body oscillates simple harmonically with a period of 2s. After what time will its kinetic energy by 75% of the total energy?

(1) 1/12 sec (2) 1/6 sec

(3) 1/4 sec (4) 1/3 sec

32. A simple pendulum performs simple harmonic motion about x = 0 with an amplitude a and time period T. The speed of the pendulum at x = a/2 will be :-

(1) $\frac{\pi a}{T}$ (2) $\frac{3\pi^2 a}{T}$

(3) $\frac{\pi a\sqrt{3}}{T}$ (4) $\frac{\pi a\sqrt{3}}{2T}$

33. The equation of SHM of a particle is given as $2\frac{d^2x}{dt^2} + 32x = 0$, where x is the displacement from the mean position of rest. The period of its oscillation (in seconds) is :-

(1) 4 (2) $\frac{\pi}{2}$ (3) $\frac{\pi}{2\sqrt{2}}$ (4) 2π

34. Match the column :

(P) sin (120°) (A) $-\frac{\sqrt{3}}{2}$

(Q) cos (210°) (B) $+\frac{\sqrt{3}}{2}$

(R) tan (330°) (C) $-\sqrt{3}$

(S) cos (–30°) (D) $+\sqrt{3}$

(1) P-A, Q-B, R-C, S-D (2) P-B, Q-A, R-C, S-B

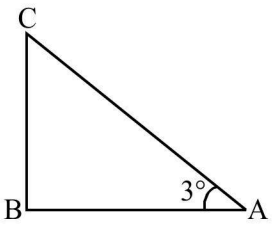
(3) P-B, Q-A, R-D, S-A (4) P-A, Q-B, R-D, S-B

35. Match the column :

(P) $\sin 2\theta$	(A) $2\cos^2\left(\frac{\theta}{2}\right)$
(Q) $\cos 2\theta$	(B) $2\sin^2\left(\frac{\theta}{2}\right)$
(R) $1 + \cos\theta$	(C) $2\sin\theta\cos\theta$
(S) $1 - \cos\theta$	(D) $2\cos^2\theta - 1$

(1) P-B, Q-C, R-D, S-A (2) P-A, Q-B, R-C, S-D
(3) P-C, Q-D, R-A, S-B (4) P-C, Q-D, R-B, S-A

36. If AC = 2m then find BC ≃

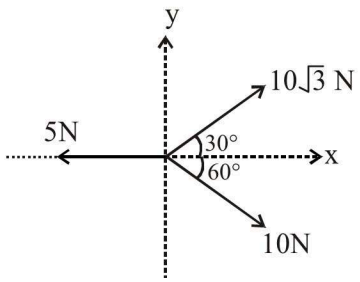


(1) 6 m (2) 0.1 m (3) 0.6 m (4) 2 m

37. Angle between minute had and hour hand of a clock when time is 7:30 AM :
(1) 30° (2) 45°
(3) 15° (4) 75°

38. If $6\cos\theta + 8\sin\theta = A\sin(\theta + \alpha)$ then find A and α :
(1) A = 10 ; $\alpha = 37°$ (2) A = 10 ; $\alpha = 53°$
(3) A = 14 ; $\alpha = 37°$ (4) A = 2 ; $\alpha = 53°$

39. Find resultant force of given forces :



(1) $(+15\hat{i})$N (2) $[10\hat{i} + 5\sqrt{3}\hat{j}]$N
(3) $[5\sqrt{3}\hat{i} - 5\sqrt{3}\hat{j}]$N (4) $[\vec{0}]$N

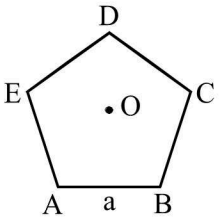
40. If resultant of $\vec{a}$ and $\vec{b}$ makes an angle 37° with $\vec{a}$ and 30° with $\vec{b}$ then find $\left(\frac{a}{b}\right)$:
(1) 5/6 (2) $5/2\sqrt{3}$
(3) 5/4 (4) 5/8

41. If $\vec{a} = 5\hat{i} + \beta\hat{j}$ and $\vec{b} = \alpha\hat{i} - 4\hat{j}$ and resultant of these vector is along x-direction then :
(1) $\alpha = 5$ (2) $\alpha = -5$
(3) $\beta = -4$ (4) $\beta = +4$

42. Resultant of two vectors of magnitude 6 unit and 10 unit is perpendicular to smaller vector then magnitude of resultant will be :
(1) $\sqrt{136}$ unit
(2) 8 unit
(3) 16 unit
(4) 4 unit

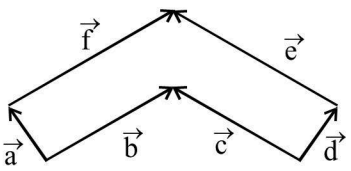
43. If $|\hat{a} + \hat{b}| = \frac{1}{2}|\hat{a} + 2\hat{b}|$ then angle between $\hat{a}$ and $\hat{b}$ will be :
(1) $\cos^{-}\left(\frac{3}{4}\right)$ (2) $\cos^{-}\left(\frac{-3}{4}\right)$
(3) $\sin^{-}\left(\frac{3}{4}\right)$ (4) $\tan^{-}\left(\frac{4}{3}\right)$

44.



ABCDE is a regular pentagon with side length 'a'. Find distance AO :
(1) 5a/6 (2) 6a/5
(3) a (4) $\sqrt{3}a/2$

45.



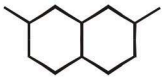
Which of the following option is correct ?
(1) $\vec{a} + \vec{f} + \vec{c} = \vec{e} + \vec{d} + \vec{b}$
(2) $\vec{a} + \vec{e} + \vec{c} = \vec{f} + \vec{d} + \vec{b}$
(3) $\vec{a} + \vec{f} + \vec{c} = \vec{e} + \vec{d} + \vec{c}$
(4) None

46. Which of the following is a heterocyclic compound?

(1)  (2) 

(3)  (4) Both (2) and (3)

47. How many 2° hydrogen atom are present in the following compound ?



(1) 10 (2) 12 (3) 8 (4) 14

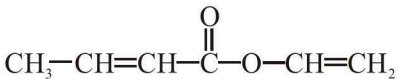
48. State of hybridisation of carbon 1, 3, 5 are in the following sequence :-

$\underset{1}{CH_2}=\underset{2}{CH}-\underset{3}{CH_2}-\underset{4}{C}\equiv\underset{5}{C}-H$

(1) sp, sp^2, sp^3 (2) sp^3, sp^2, sp

(3) sp^3, sp, sp^2 (4) sp^2, sp^3, sp

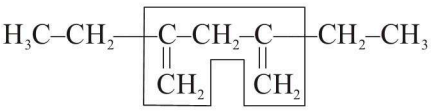
49. Common name of the following ester is

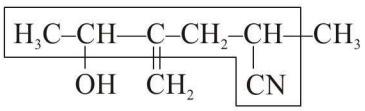


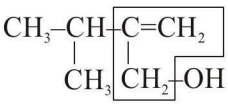
(1) Vinyl acrylate (2) ethenyl acrylate

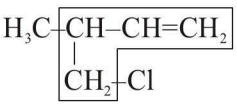
(3) Vinyl crotonate (4) Vinyl but-2-enoate

50. Which of the following is incorrect selection of C-chain according to IUPAC system ?

(1) 

(2) 

(3) 

(4) 

51. Ratio of σ & π bonds in tetra cyano ethylene molecule :-

(1) 9 : 7 (2) 5 : 7

(3) 7 : 7 (4) 1

52. The common and IUPAC names for the group, $(CH_3)_2CHCH_2$–respectively are :-

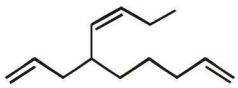
(1) Isobutyl, 2-methylpropyl

(2) Isobutyl, 1-methylpropyl

(3) tert-Butyl, 1, 1-dimethylethyl

(4) sec-Butyl, 2-methylpropyl

53. What is the correct IUPAC name of the following compound ?



(1) 6-(2-propenyl)-1, 7-decadiene

(2) 5-(2-propenyl)-3, 9-decadiene

(3) 4-(1-propenyl)-1, 8-nonadiene

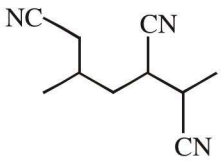
(4) 4-(1-butenyl)-1, 8-nonadiene

54. Common name of ethyl isocyanide is :-

(1) Propionoisonitrile (2) Acetoisonitrile

(3) Isopropiononitrile (4) Propanoisonitrile

55. What is the correct IUPAC name of the compound?



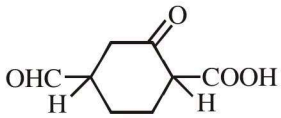
(1) 3-cyano-2, 5-dimethyl heptanedinitrile

(2) 2-methyl hexane-1, 4, 5-tricarbonitrile

(3) 2, 5-dimethyl-1, 3, 7-heptanedinitrile

(4) 5-cyano-3, 6-dimethyl heptanedinitrile

56. Write the IUPAC name of the following compound



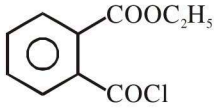
(1) 2, 4-Dioxocycloheptanoic acid

(2) 4-Formyl-2-oxocyclohexane-1-carboxylic acid

(3) 2, 4-Dioxocyclohexanecarboxylic acid

(4) 2, 4-Dioxocyclohexane-1-carboxylic acid

57. The IUPAC name of the compound is :-



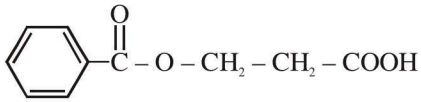
(1) Ethyl 2-(chloroformyl) benzoate

(2) Ethyl 2-(chloromethanoyl) benzoate

(3) Ethyl 2-(chlorooxy) benzoate

(4) 2-(Ethoxycarbonyl) benzyl chloride

58. What is the correct IUPAC name of the compound shown below ?



(1) 3-carboxyl phenyl propanoic acid

(2) 3-oxyphenyl carboxy propanoic acid

(3) 3-hydroxy-3-oxoethyl benzoate

(4) 3-(benzoyloxy) propanoic acid

59. Total number of position isomers of dimethyl cyclohexane :-

(1) 2 (2) 3 (3) 4 (4) 5

60. What is the relationship between given compound A & B ?

(A) (B)

(1) Position isomers (2) Chain isomers

(3) Functional isomers (4) None

61. Vapour density of the equilibrium mixture of the reaction $SO_2Cl_2(g) \rightleftarrows SO_2(g) + Cl_2(g)$ is 50. The extent of dissociation of $SO_2Cl_2(g)$ is:-

(1) 43.33% (2) 66.67%

(3) 80.0% (4) 35.0%

62. For the following three reactions 1, 2 and 3, equilibrium constants are given :

(1) $CO_{(g)} + H_2O_{(g)} \rightleftharpoons CO_{2(g)} + H_{2(g)}$; K_1

(2) $CH_{4(g)} + H_2O_{(g)} \rightleftharpoons CO_{(g)} + 3H_{2(g)}$; K_2

(3) $CH_{4(g)} + 2H_2O_{(g)} \rightleftharpoons CO_{2(g)} + 4H_{2(g)}$; K_3

Which of the following relations is correct ?

(1) $K_1\sqrt{K_2} = K_3$ (2) $K_2K_3 = K_1$

(3) $\frac{K_3}{K_2} = K_1$ (4) $K_3 = K_2^3K_1^2$

63. Consider the following reversible gaseous reactions (at 298 K) :-

(a) $N_2O_4 \rightleftharpoons 2NO_2$ (b) $2SO_2 + O_2 \rightleftharpoons 2SO_3$

(c) $2HI \rightleftharpoons H_2 + I_2$ (d) $X + Y \rightleftharpoons 4Z$

Highest and lowest value of $\frac{K_p}{K_c}$ will be shown by :-

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

64. For a reaction,

$$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$$

The equilibrium mixture contains 30% of N_2, 40% of H_2 and rest NH_3 by volume, then find K_p if total pressure of system at equillibrium is 5 atm?

(1) $\frac{3}{16}$ (2) $\frac{16}{3}$

(3) $\frac{3}{64}$ (4) None of these

65. For a gas reaction,

$3H_2(g) + N_2(g) \rightleftharpoons 2NH_3(g)$ at equillibrium, the partial pressure of H_2 and N_2 are 0.8 and 1.6 atm respectively and the total pressure of the entire system is 3.2 atm. What will be the value of K_p : -

(1) 0.58 atm^{-2} (2) 0.78 atm^{-2}

(3) 0.88 atm^{-2} (4) 0.48 atm^{-2}

66. $NaHCO_3$ decompose as

$2NaHCO_3(s) \rightleftharpoons Na_2CO_3(s) + CO_2(g) + H_2O(g)$

The equilibrium pressure is 1.04 atm. The K_p for reaction is :-

(1) 0.2704 atm (2) 2.704 atm

(3) 27.04 atm (4) 270.4 atm

67. A mixture of dihydrogen and dioxygen at one bar pressure contains 20% by weight of dihydrogen. The partial pressure of dihydrogen will be :

(1) 0.4 bar (2) 0.6 bar

(3) 0.8 bar (4) 0.2 bar

68. Given :

$N_2 + O_2 \rightleftharpoons 2NO$; K_1

$\frac{1}{2}N_2 + \frac{1}{2}O_2 \rightleftharpoons NO$; K_2

$2NO \rightleftharpoons N_2 + O_2$; K_3

$NO \rightleftharpoons \frac{1}{2}N_2 + \frac{1}{2}O_2$; K_4

Pick out the correct relation :-

(1) $K_1 \times K_3 = 1$ (2) $\sqrt{K_1} \times K_4 = 1$

(3) $\sqrt{K_3} \times K_2 = 1$ (4) All of the above

69. 1 mole N_2 and 3 mole H_2 are placed in a closed container at a pressure of 4 atm. The pressure falls to 3 atm at the same temperature when the following equillibrium is attained

$$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$$

The equillibrium constant K_p for dissociation of NH_3 is :-

(1) $\frac{1}{0.5} \times (1.5)^3$ atm^{-2} (2) $0.5 \times (1.5)^3$ atm^2

(3) $\frac{0.5 \times (1.5)^3}{3 \times 3}$ atm^2 (4) $\frac{1}{0.5 \times (1.5)^3}$ atm^{-2}

70. In a reversible reaction, A $\underset{K_2}{\overset{K_1}{\rightleftharpoons}}$ B the initial moles of A and B are 'a' and 'b' respectively, then the value of 'x' (dissociation) in terms of K_1, K_2, a and b will be :-

(1) $\frac{K_1a - K_2b}{K_1 + K_2}$ (2) $\frac{K_1a - K_2b}{K_1 - K_2}$

(3) $\frac{K_1a - K_2b}{K_1K_2}$ (4) $\frac{K_1a + K_2b}{K_1 + K_2}$

71. Metals A, B, C and D can reduce copper from a solution having Cu^{+2} ion according to following reactions :-

$A(S)+Cu^{+2}(aq.) \rightleftharpoons A^{+2}(aq.)+Cu(S)$; $K_1=5\times10^{15}$

$B(S)+Cu^{+2}(aq.) \rightleftharpoons B^{+2}(aq.)+Cu(S)$; $K_2=8\times10^{19}$

$C(S)+Cu^{+2}(aq.) \rightleftharpoons C^{+2}(aq.)+Cu(S)$; $K_3=3\times10^{-14}$

$D(S)+Cu^{+2}(aq.) \rightleftharpoons D^{+2}(aq.)+Cu(S)$; $K_4=2\times10^{-21}$

Which metal will remove cupric ion from the solution to a greater extent ?

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

72. For the equilibrium reaction

$C_{(graphite)} + CO_2(g) \rightleftharpoons 2CO(g)$; the mole percent of CO is 50. The degree of dissociation for the reaction would be :-

(1) $\frac{1}{2}$ (2) $\frac{1}{3}$ (3) $\frac{1}{4}$ (4) $\frac{1}{5}$

73. The following equillibrium constants were determined at 1120 K :-

$2CO(g) \rightleftharpoons C(s) + CO_2(g)$; $K_{P1} = 10^{-14}atm^{-1}$

$CO(g) + Cl_2(g) \rightleftharpoons COCl_2(g)$; $K_{P2} = 6 \times 10^{-3}atm^{-1}$

What is the value of equilibrium constant K_C for the following reaction at 1120 K:-

$C(s) + CO_2(g) + 2Cl_2(g) \rightleftharpoons 2COCl_2(g)$

(1) $3.31 \times 10^{11}\ M^{-1}$ (2) $5.5 \times 10^{10}\ M^{-1}$

(3) $5.51 \times 10^{6}\ M^{-1}$ (4) None of these

74. In the reaction, $A_{(s)} + B_{(g)} + Heat \rightleftharpoons 2C_{(s)} + 2D_{(g)}$ equilibrium is established. The pressure of B is doubled to re–establish the equilibrium. The factor by which D is changed is :–

(1) 2 (2) 3 (3) $\sqrt{2}$ (4) $\sqrt{3}$

75. For the reaction :

$A(g) + B(g) \rightleftharpoons C(g) + D(g)$;$K_C=1$

If the initial moles of A,B,C and D are 2,1,7 and 3 moles respectively in a 10 litre vessel. What is the equilibrium concentration of A ?

(1) 3.46 M (2) 0.346 M

(3) 2 M (4) None of these

76. Cl is a bridge element of :-

(1) Se and Cr (2) As and V

(3) Br and Mn (4) Ti and Ge

77. Match the column :-

(A)	Coinage family member	(P)	Unp
(B)	IUPAC name of Db	(Q)	Unb
(C)	8^{th} period alkali metal	(R)	Uue
(D)	2^{nd} last element of 5f series	(S)	Uuu

(1) A-S, B-R, C-P, D-Q

(2) A-S, B-P, C-R, D-Q

(3) A-P, B-Q, C-R, D-S

(4) A-R, B-S, C-Q, D-P

78. Total number of s-electrons in 2^{nd} alkaline earth metal will be :-

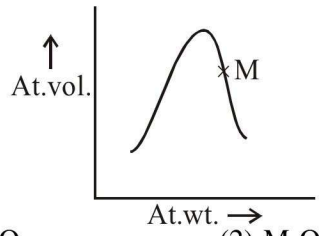
(1) 2 (2) 6 (3) 4 (4) 8

79. Configuration of Sg(106) will be :-

(1) $[Rn]4f^{14}5d^56s^1$ (2) $[Xe]4f^{14}5d^46s^2$

(3) $[Rn]5f^{14}6d^47s^2$ (4) $[Rn]5f^{14}6d^57s^1$

80. In graph element M forms which stable oxides :-



(1) M_2O (2) M_2O_3

(3) M_3O_2 (4) MO

81. For Cl_{17} effective nuclear charge and screening constant are respectively :-

(1) 10.9, 6.1 (2) 10.1, 6.9

(3) 6.9, 10.1 (4) 6.1, 10.9

82. Largest size is of :-

(1) O^{-2} (2) Ca^{+2} (3) Cl^- (4) Na^+

83. Configuration of Cm 96 will be :-

(1) $[Rn]4f^75d^16s^2$ (2) $[Rn]5f^86d^07s^2$

(3) $[Rn]5f^76d^17s^2$ (4) $[Rn]5f^76d^07s^2$

84. Maximum number of unpaired electron are in :-

(1) Gd_{64} (2) Eu_{63}

(3) Yb_{70} (4) Lu_{71}

85. Configuration $[Rn]5f^06d^27s^2$ belongs to :-

(1) d-block, IIIB group, 7^{th} period

(2) f-block, IIIB group, 7^{th} period

(3) f-block, IVB group, 6^{th} period

(4) f-block, IIIB group, 6^{th} period

86. $^{238}_{92}U$ emits 2α and 1β particle then daughter nuclei will belong to which group :-

(1) II A (2) zero group

(3) IV B (4) III B

87. Ionic radii of F^-, O^{-2} and N^{-3} are respectively :-

(1) 1.71, 1.40, 1.36 (2) 1.36, 1.40, 1.71

(3) 1.36, 1.71, 1.40 (4) 1.71, 1.36, 1.40

88. Which given order of size is/are correct :-

(1) Ne > K (2) Mg > Al

(3) F < Ne (4) 2, 3 both

89. Choose wrong statement :-

(1) all typical elements are representative element

(2) all bridge elements are representative element

(3) 1^{st} transition series is from Sc to Cu

(4) Alkali metals have largest volume in a period

90. M^{-3} configuration is $[He]2s^22p^3$ then configuration of M^{+2} will be :-

(1) $1s^22s^2$ (2) [He]

(3) $1s^22s^22p^5$ (4) $1s^22s^22p^2$

91. N.K. cells are type of :-
(1) Erythrocytes (2) Neutrophils
(3) Lymphocytes (4) Monocytes

92. Which IFN is used to treat "Kaposi sarcoma" ?
(1) α (2) β (3) γ (4) θ

93. Prime symptom of inflammation is :-
(1) Redness (2) Swelling
(3) High temperature (4) Pain

94. Which provide micro-environment for the development and maturation of B - lymphocytes?
(1) Bone - marrow (2) Spleen
(3) Thymus (4) Both 1 and 3

95. Grafting between siblings is :-
(1) Auto (2) *Allo* (3) ISO (4) Xeno

96. Incorrect about spleen is -
(1) Secondary lymphoid organ
(2) Bean - shaped cell
(3) Contains phagocytes and lymphocytes
(4) Traps blood - borne micro organisms

97. Memory based acquired immunity envolved in_____ based on the differentiate foreign organisms.-

(1) Lower plants (2) Bacteria
(3) Higher vertebrates (4) Lower vertebrates

98. Find out the incorrect matching with regards to innate immunity :-
(1) Physical barriers = Mucus coating of epithelium
(2) Cytokine barriers = Interferons
(3) Cellular barriers = Skin
(4) Physiological barriers = Saliva

99. ATS provides :-
(1) Natural active innate immunity
(2) Natural passive innate immunity
(3) Artificial active acquired immunity
(4) Artificial passive acquired immunity

100. Differentiation of immature lymphocytes into antigen-sensitive lymphocytes occurs in :-
(1) Spleen
(2) Lymph nodes
(3) Bone marrow and Thymus
(4) Appendix

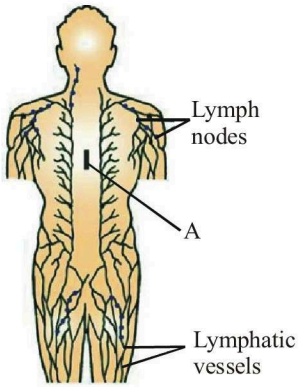
101. ..... are responsible for the activation of lymphocytes present in lymph nodes and cause the immune response :-
(1) Antibodies (2) Interferons
(3) Antigens (4) Interleukins

102. Which one of the following antibody is involved in Allergy ?
(1) IgE (2) IgA (3) IgD (4) IgM

103. Which function of lymphocytes does occur in lymphoid organs ?
(a) Origin (b) maturation (c) Proliferation
(1) a, b (2) a, c (3) b, c (4) a, b, c

104. The exaggerated response of the immune system to certain antigens is called :-
(1) Primary immune response
(2) Secondary immune response
(3) Immune suppression response
(4) Allergy

105. Which of the following statement is false for the structure labelled as " A" in the figure given below?



(1) Maturation of lymphocytes takes place
(2) Immature lymphocytes differentiate into antigen- sensitive lymphocytes
(3) Lymphocytes interact with antigen and become effector cells
(4) Micro-environment is provided for development and maturation of T-lymphocytes.

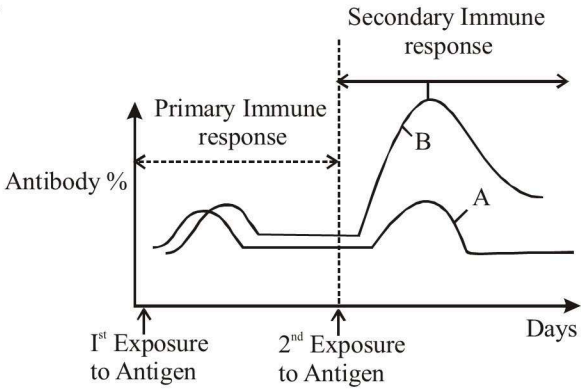
106. Virus infected cells secrete proteins called interferons which protects non - infected cells from viral infections. They are a part of :-
(1) Physical barriers
(2) Physiological barriers
(3) Cellular barriers
(4) Anatomical barriers

107. Which antibody acts as B-cell receptor ?
(1) IgA (2) IgD
(3) IgE (4) IgM

108. Who disproved the " good humor hypothesis" of health using thermometer to demonstrate normal body temperature in person with blackbile?
(1) Hippocrates
(2) Indian Ayurveda system of medicine
(3) William Harvey
(4) Both (1) and (2)

109. Mark the correct statement :-
(a) Yoga has been practised to achieve physical and mental health
(b) Infectious diseases are very common and everyone of us suffers from these at sometime or other
(c) AIDS is an infectious disease
(d) Cancer is non - infectious disease
(e) Healthy persons bring economic prosperity
(1) a, b and c (2) b, c, d and e
(3) c and d (4) a, b, c, d and e

110.



Labelled B is : -
(1) IgM (2) IgG (3) IgD (4) IgA

111. Mucosa is the lining of :-
(a) Respiratory tract (b) Urogenital tract
(c) GIT (d) All of these
(1) a (2) b + c (3) c + a (4) a + b + c

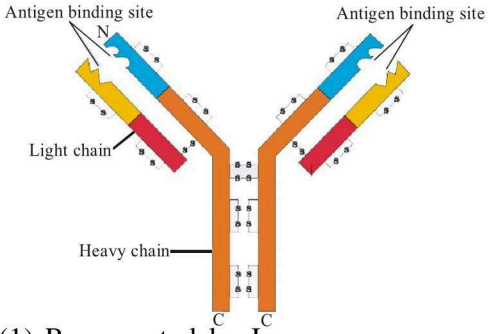
112. Antibody is represented as :-
(1) H_1L_1 (2) H_2L_2 (3) H_3L_3 (4) H_4L_4

113. Which lymphoid tissue constitutes about 50% of the lymphoid tissue in human body:-
(1) Lymphnodes (2) Bone marrow
(3) MALT (4) Thymus

114. A monomer antibody has how many F_C-part ?
(1) 1 (2) 2 (3) 3 (4) 4

115. Most of antigens are_____in nature :-
(1) Lipids (2) Carbohydrates
(3) Proteins (4) Nucleic acid

116. Which of the following statement is false for the structure given below : -



(1) Represented by Ig
(2) These are found in blood so response is termed as humoral immune response
(3) These are secreted by T-cells
(4) They have four peptide chains

117. Read the following statements (A - D)
(A) When people are healthy they are more efficient at work
(B) Health for a long time, was considered as a state of body and mind where there was a balance of certain humors
(C) William harvey thought that persons with 'blackbile' belonged to hot personality and would have fevers
(D) Pathogens have to adapt to life within the environment of the host
How many of the above statements are false :-
(1) 3 (2) 4 (3) 1 (4) 2

118. Which of the following pair is not matched correctly : -
(1) IgG - Can cross placenta
(2) IgD - Activation of B-lymphocytes
(3) IgM - Chronic infections
(4) IgE - Protection from parasites

119. Which is **not** a match to passive immunity :-
(1) Colostrum secreted by mother during initial days of lactation protects the infant
(2) Immunity is slow and takes time to give its full effective response
(3) Foetus receive antibodies from the mother through placenta
(4) Ready made antibodies are directly given to protect the body against foreign agent

120. Read the statement a-d. How many statements are **true** for passive immunity :-
a. Anti-tetanus serum administered after an injury
b. An injection of anti-venom after snake bite.
c. A newborn vaccinated against Hepatitis-B.
d. Life time immunity attained by suffering from chicken pox once.
(1) One (2) Two (3) Three (4) Four

121. When the body is exposed to an antigen for the first time, a low intensity primary response is elicited. During this response, the antibodies formed are of the class :-

(1) IgM (2) IgG (3) IgA (4) IgE

122. Identify the correct match from the column I, II and III :

Column I		Column II		Column III	
1	Fibroblast	a	Oval shaped	i	Serotonin, Histamine
2	Macrophage	b	Kidney shaped nucleus	ii	Undifferentiated
3	Mastocyte	c	S-shaped nucleus	iii	Fat storage
4	Adipocyte	d	Irregular	iv	Phagocytic

Options :

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

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

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

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

123. Number of features/examples associated with merocrine and holocrine type of glands respectively are :

(A) Simple diffusion mode of secretion

(B) Watery secretion

(C) Highly concentrated secretion

(D) Sebaceous gland

(E) Salivary gland

(F) Mammary gland

(G) Sweat glands

(H) Cellular cytoplasm is not destroyed during secretion

(I) Tear glands

(1) 2, 6 (2) 4, 2 (3) 6, 2 (4) 4, 3

124. Which cells of connective tissue are also known as "cart-wheel cells"?

(1) Adipose cells

(2) Mast cells

(3) Plasma cells

(4) Macrophage

125. Two friends 'Mr. A' and 'Mr. B' were having a telephonic conversation. Both of them made the following statements.

Mr. A : I am inelastic

Mr. B : I am highly elastic

Mr. A : On boiling I can yield gelatin

Mr. B : On boiling I do not yield gelatin

Mr. A : Chemically I am less stable

Mr. B : Chemically I am highly stable

Mr. A : I have no branches

Mr. B : I do have branches

'Mr. B and 'Mr. A respectively are -

(1) Collagen fibre, Elastic fibre

(2) Collagen fibre, Reticular fibre

(3) Elastic fibre, Reticular fibre

(4) Elastic fibre, Collagen fibre

126. How many of the following statements are incorrect regarding the tissue that constitutes the 'Tela subcutanea' ?

(A) Dense connective tissue

(B) Spongy connective tissue

(C) Intercellular space and matrix is minimum

(D) Irregular arrangement of bundles of reticular fibres

(E) Mast cells, macrophages and fibroblast are more in number

(F) Also forms Epimysium

(G) Present beneath the skin

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

127. Structure that connect bone to bone is :

(1) Cord of WFCT

(2) Sheath of WFCT

(3) Cord of YFCT

(4) Sheath of YFCT

128. Presence of 'Wharton's Jelly' could be observed in-

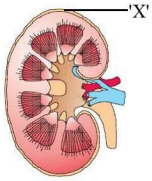
(1) Reticular fibrous connective tissue

(2) Pigmented connective tissue

(3) Mucoid connective tissue

(4) Areolar connective tissue

129.



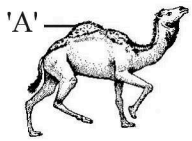
'X' is made up of ;

(1) Dense regular C.T. with immense bundles of collagen fibre

(2) Dense regular C.T. with immense elastic fibre

(3) Dense irregular C.T. with immense bundles of collagen fibre

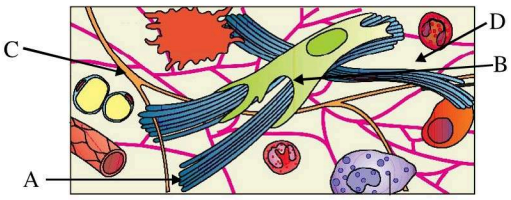
(4) Dense irregular C.T. with immense elastic fibres

130. 

Identify the correct option regarding 'A'

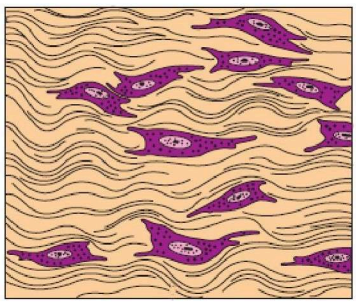
(1) White fat - monolocular adipocytes
(2) Brown fat - monolocular adipocytes
(3) White fat - multilocular adipocytes
(4) Brown fat - multilocular adipocytes

131. Given below is the diagrammatic representation of a loose connective tissue.



Identify the correct option :

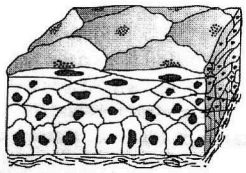
	(A)	(B)	(D)	(C)
(1)	Collagen fibres	Fibroblast	Elastic fibres	Areolae
(2)	Collagen fibres	Fibroblast	Areolae	Reticular fibres
(3)	Collagen fibres	Macrophage	Areolae	Elastic fibres
(4)	Collagen fibres	Fibroblast	Areolae	Elastic fibres

132. 

Identify the figure

(1) Regular YFCT (2) Irregular WFCT
(3) Regular WFCT (4) Irregular YFCT

133. Represented below is the diagrammatic representation of an epithelium



How many of the below mentioned features/characteristics are valid for such an epithelium?

(A) It is multilayered, hence known as compound epithelium
(B) It has maximum role in secretion and absorption
(C) Its main function is to provide protection against chemical and mechanical stresses
(D) It cover the dry surfaces of skin, the moist surface of buccal cavity, pharynx, inner lining of ducts of salivary glands and of pancreatic duct.

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

134. Glands which do not have ducts are called-

(1) Endocrine glands (2) Exocrine glands
(3) Mixed glands (4) Heterocrine glands

135. Serotonin is derived from which amino acid ?

(1) Histidine (2) Tryptophan
(3) Alanine (4) Tyrosine

136. Which of the following is a type of animal tissue?

(1) Epithelial (2) Connective
(3) Muscular (4) All of these

137. Epithelium that is made of a single thin layer of flattened cells with irregular boundaries-

(1) Simple squamous
(2) Simple cuboidal
(3) Transitional
(4) Compound squamous

138. Tall and slender cells are present in-

(1) squamous epithelium
(2) columnar epithelium
(3) pseudostratified epithelium
(4) both (2) and (3)

139. Junctions that perform cementing to keep neighbouring cells together is-

(1) Tight junction (2) Adhering junction
(3) Gap junction (4) Interdigitation

140. Sebaceous glands are -

(1) Acrine (2) Merocrine
(3) Holocrine (4) Apocrine

141. Rectum has :-

(1) Brush bordered columnar epithelium
(2) Glandular columnar epithelium
(3) Glandular brush bordered columnar epithelium
(4) Ciliated columnar epithelium

142. Buccopharyngeal cavity of frog is lined by which epithelium ?

(1) Stratified cuboidal
(2) non-ciliated stratified columnar
(3) ciliated stratified columnar
(4) keratinized stratified squamous

143. Endoneurium, Epimysium, Perimysium, Endomysium, respectively are -
(1) Areolar C.T., Sheath of WFCT, Sheath of WFCT, Areolar C.T.
(2) Sheath of WFCT, Areolar C.T., Areolar C.T., Areolar C.T.
(3) Areolar C.T., Sheath of WFCT, Areolar C.T., Areolar C.T.
(4) Areolar connective tissue, Cord of WFCT, Areolar C.T. Areolar C.T.

144. Identify the cell

(1) Fibroblast cell
(2) Mast cell
(3) Plasma cell
(4) Macrophage

145. Inner lining of cheeks is made by -
(1) Keratinized stratified squamous epithelium
(2) Non-keratinized stratified squamous epithelium

(3) Stratified cuboidal epithelium
(4) Stratified columnar epithelium

146. Epithelium tissue originates from -
(1) Ectoderm (2) Mesoderm
(3) Endoderm (4) All

147. Water proof epithelium is -
(1) Transitional epithelium
(2) Simple cuboidal epithelium
(3) Stratified cuboidal epithelium
(4) All

148. Phagocytic cells of connective tissue are -
(1) Macrophages
(2) Lymphocytes
(3) Fibroblast
(4) Adipocytes

149. Dense network forming fibres are -
(1) Elastic fibres
(2) Reticular fibres
(3) Arzyrophil fibres
(4) Both (2) and (3)

150. Secretory duct of salivary gland is lined by-
(1) Simple cuboidal epithelium
(2) Stratified columnar epithelium
(3) Stratified cuboidal epithelium
(4) Stratified squamous epithelium

151. Duramater is composed of -
(1) Regular WFCT
(2) Regular YFCT
(3) Irregular YFCT
(4) Irregular WFCT

152. Fallopian tube is lined by -
(1) Ciliated simple cuboidal epithelium
(2) Ciliated stratified columnar epithelium
(3) Simple columnar epithelium
(4) Ciliated simple columnar epithelium

153. Which of the following is phylogenetic in Bentham and Hooker's classification :-
(1) Position of dicots
(2) Position of Gymnosperms
(3) Position of monocots
(4) Use of vegetative characters

154. Why scientific names are given in latin or Greek languages ?
(1) Latin and greek languages are popular languages throughout the world
(2) Most of the scientific journals are published in latin or greek
(3) These languages are dead languages, so chances of alteration are minimum
(4) Linnaeus who proposed scientific nomenclature was a greek scientist

155. Bryopsida, Lycopsida and Sphenopsida are taxon of which rank :-
(1) Division (2) Class
(3) Order (4) Family

156. Chemosynthetic bacteria do not need light energy to grow because :-
(1) They prepare their food without the help of light
(2) They do not like sunlight brightness
(3) Due to absence of chlorophyll they are incapable to manufacturing their own food
(4) They use other kinds of light for manufacturing their own food

157. According to biological concept of species proposed by Mayr, the species is a population of freely interbreeding individual, reproductively isolated from other populations either due to genetic, cytological or behavioural barriers. The above definition of species holds good for most of the organisms but it is not universally applicable to all the organisms because :-

(1) This definition is not based on morphological characters

(2) A large number of organisms are there, which do not reproduce sexually so in these species determination can not be done on the basis of inter breeding

(3) There is no consideration of phylogeny

(4) Method of reproduction is not same in all the organisms

158. If a bacterial cell divides once every minute and takes 23 minutes to fill a bottle. How much time it will take to fill half the bottle :–

(1) 24 min (2) 22 min.

(3) 46 min. (4) 21 min.

159. When a motile gram positive bacterium treated with lysozyme, lost its pathogenicity. The pathogenicity of the bacterium is most likely due to :-

(1) Flagellum (2) Cell membrane

(3) Cell wall (4) Pili

160. Which statement is correct ?

(A) R.H.Whittaker proposed five kingdom classification

(B) In zoological parks wild animals are kept in protected environments

(C) Keys are generally analytical in nature

(D) Keys are based on the contrasting characters

(1) Only A, B (2) Only B, C

(3) Only C, D (4) A, B, C, D

161 On the basis of morphological concept of species all the human beings of world constitute:-

(1) One biological species

(2) Many biological species

(3) One taxonomic species

(4) Many taxonomic species

162. According to hierarchical system of classification which of the following is correct ?

(A) Similarities decrease from species to kingdom

(B) Similarities increase from kingdom to species

(C) Dissimilarities decrease from division to species

(D) Similarities decrease from species to class

(1) Only ABC (2) Only BCD

(3) Only BC (4) ABCD all

163. Which statement is correct in relation to numerical classification ?

(A) It employs numerical methods for the evaluation of similarities and differences between the species

(B) All characters considered for analysis are given equal importance and weightage

(C) This system of classification is considered better because it uses large number of comparable characters to assign a place to the species

(D) In this classification we can use computer for analysis

(1) Only ABC (2) Only BCD

(3) Only BC (4) ABCD all

164. Which of the following is true with reference to taxonomy ?

(1) A taxon always belongs to a category

(2) A category always indicates a taxonomic rank

(3) In taxonomic hierarchy various taxa (taxon) are arranged in their descending or ascending order.

(4) All are correct

165. Linnaeus divided flowering plants into 23 classes starting with the class Monandria with single stamen and plants with twenty or more stamens were assigned to classes Icosandria and Polyandria. He also included all non-flowering plants such as algae, fungi, lichens, mosses and ferns in a separate class called

(1) Monandria (2) Phanerogamia

(3) Cryptogamia (4) Diandria

166. Linnaeus in his book " Species plantarum" (1753) proposed scientific names and Latin diagnosis of *Solanum tuberosum, Mangifera indica, Saraca indica, Tamarindus indicus, Rosa indica* and *Solanum nigrum*. In the above case, how many species and genera respectively described by Linnaeus

(1) 7, 5 (2) 6, 5 (3) 5, 5 (4) 4, 5

167. Which is incorrect statement about flagellum of bacteria?

(1) S and M rings are present in Gram (–) bacteria

(2) L,P,S and M rings are present in Gram (–) bacteria

(3) Only S and M rings are present in Gram(+) bacteria

(4) L, P, S and M rings are present in Gram (+) bacteria

168. Neo systematics aims at :

(1) Delimiting various taxa of organisms and establishing their relationship

(2) Identification and arrangement of organisms on the bgasis of their cytological characterastics

(3) The classification of organisms based on broad morphological characters

(4) The classification of organisms based on their evolutionary history and establishing their phylogeny on the totality of various parameter from all field of studies

169. Study the following statement and give the answer:-

(A) Bacteria are sole members of the kingdom monera

(B) Bacteria are most abundment micro-organisms

(C) A handful of soil contain hundreds of bacteria

(D) In bacteria, mesosome help in respiration

(E) Bacteria show most extensive metabolic diversity

Select the most appropriate option from the following :

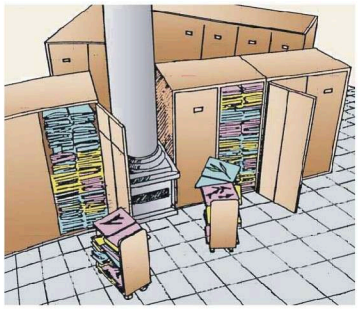
(1) A, B & E are correct C & D are incorrect

(2) A, C, E are correct B & D are incorrect

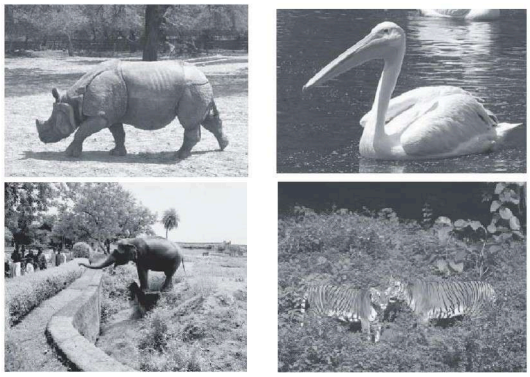
(3) A, B & C are correct D & E are incorrect

(4) A, B, C, D and E are correct

170.



(A)



(B)

First of all identify the A and B then their correct function and they are made for which type of organisms. Which one of these options is most correct with respect to identification, uses and about the organisms :-

		Identification	Uses	Made for which organisms
(1)	A	Herbarium	For taxonomy of plants only	Plant species
	B	Zoological park	For taxonomy of animals only	Animal species
(2)	A	Zoological park	For taxonomy of animals	Animal species
	B	Herbarium	For taxonomy of plants	Plant species
(3)	A	Herbarium	For taxonomy of both plants and animals	For both plants and animals
	B	Zoological park	For taxonomy of both plants and animals	For both plants and animals
(4)	A	Museum	For taxonomy of both plants and animals	For both plants and animals
	B	Zoological park	For taxonomy of both plants and animals	For both plants and animals

171. What was the correct sequence of following types of classification system with respect to their evolution ?
(1) Artificial → Natural → Phylogenetic → Practical
(2) Artificial→ Practical → Natural → Phylogenetic
(3) Practical → Artificial → Natural → Phylogenetic
(4) Numerical → Artificial → Natural → Practical → Phylogenetic

172. Which of the following is a correct statement:-
(A) All bacteria are parasite
(B) All bacteria are seprotroph
(C) Mostly bacteria are heterotrophs
(D) Mostly bacteria are autotrophs
(1) C (2) A, B (3) A, C (4) A, D

173. The main difference between photosynthetic and chemosynthetic bacteria is that :-
(1) Water is used by photosynthetic bacteria, whereas it is rejected by chemosynthetic bacteria

(2) Photosynthetic bacteria are seen as parasites within green plant cells, whereas chemosynthetic bacteria are seen as saprophytes on other decaying food substances.
(3) Photosynthetic bacteria are seen in green plants, whereas chemosynthetic bacteria are seen in chemical substances
(4) Energy from sunlight is used in photosynthetic bacteria, while in chemosynthetic bacteria energy is used by the oxidation of inorganic substances

174. In the following, which statement is correct :-
(1) When volution granules stained by basic dyes, these granules show different colours.There fore they are also termed as metachromatic granules.
(2) The volutin granules are phosphate polymers and function as a storage reservoir for phosphate
(3) Bacterial DNA is attached to cell membrane and the membrane may be involved in separation of duplicated DNA into daughter cells during division
(4) All of the above

175. An HFr bacterium is one that contains :-
(1) Many plasmids
(2) Chromosomal material acquired from a recipient cell
(3) A plasmid integrated in to its chromosome
(4) The ability to undergo transduction

176. In a Gram-negative bacterium cell wall consist of:-
(1) A thick layer of peptidoglycan surrounded by an outer membrane
(2) A thin layer of peptidoglycan surrounded by an outer thick layer of lipopolysaccharide
(3) Two layers of peptidoglycan with a layer of lipid in between
(4) Cholesterol and peptidoglycan

177. During a microbial study, a spore was observed which is thick walled, highly resistant and gets surrounded by different layers. These can withstand temperature as high as 100°C or as low as –100°C, so they can remain unharmed during pasteurisation. From these characters spore must be :-
(1) Spore (2) Endospore
(3) Conidia (4) Zoospores

178. Most extensive metabolic diversity found in
(1) Members green algae
(2) Members of fungi
(3) Members prokaryotes
(4) Members of Plantae

179. Taxonomic aid which contains information on any one taxon, called :-
(1) Herbarium (2) Zoo
(3) Botanical garden (4) Monographs

180. Match the following & choose the correct option:

(A) Family	(i) *Manigifera indica*
(B) Kingdom	(ii) Solonales
(C) Order	(iii) Solanum
(D) Species	(iv) Plantae
(E) Genus	(v) Malvaceae

(1) (i)–D, (ii)–C, (iii)–E, (iv)–B, (v)–A
(2) (i)–E, (ii)–D, (iii)–B, (iv)–A, (v)–C
(3) (i)–D, (ii)–E, (iii)–B, (iv)–A, (v)–C
(4) (i)–E, (ii)–C, (iii)–B, (iv)–A, (v)–D