VIDYAM CLASSES
विद्या for NEET-JEE
(A New Venture by Senior Teachers of Janakpuri-Delhi)

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TEST PRACTICE TEST - 03

MEDICAL (DATE : 21-01-2026) M.M. 720 : TIME 3 HR

Topic Covered:

Physics	:	Gravitation, Solids, Fluids	$\mathbf{P_{PS}}$
Chemistry:		Thermodynamics, IUPAC Naming Isomerism	$\mathbf{C_{VS}}$
Botany	:	The Unit of Life, Cell Cycle & Cell Divisions, Photosynthesis in higher Plants	$\mathbf{B_{HNS}}$
Zoology	:	Locomotion and Movement, Neural Control & Coordination, Chemical Coordination & Integration.	$\mathbf{Z_{SP}}$

INSTRUCTIONS:

1. The paper contains 180 objective type questions. Four alternatives are given for each objective type question out of which only one is correct. Darken the correct alternative on the given answer-sheet, with a pencil or pen.
2. Objective type questions carry 4 marks each. For each incorrect answer 1 mark will be deducted.
3. No student is permitted to leave examination hall before the time is complete.
4. Use of calculator is not permitted.
5. Use of unfair means shall invite cancellation of the test.

PHYSICS

1. Acceleration due to gravity at surface of a planet is equal to that at surface of earth and density is 1.5 times that of earth. If radius of earth is R, radius of planet is

(1) 3/2 R (2) 2/3 R

(3) 9/4 R (4) 4/9 R

2. If masses of two-point objects are tripled and distance between them is doubled, then gravitational force of attraction between them will

(1) Increase by 225%

(2) Decrease by 56%

(3) Increase by 125%

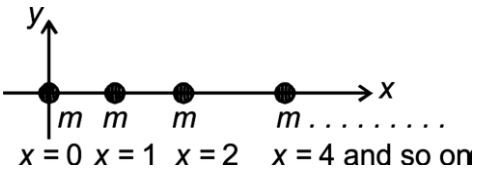
(4) Decrease by 144%

3. The ratio of kinetic energy required to be given to the satellite to escape from earth's surface to the kinetic energy required to be given to the same satellite to revolve round the earth in an orbit just above earth's surface, is

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

(3) 12 : 1 (4) 4 : 1

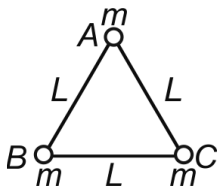
4. A large number of identical point masses m are placed along x-axis, at x = 0, 1, 2, 4, ... The magnitude of gravitational force on mass at origin (x = 0), will be



(1) Gm^2 (2) $4/3\ Gm^2$

(3) $2/3\ Gm^2$ (4) $5/4\ Gm^2$

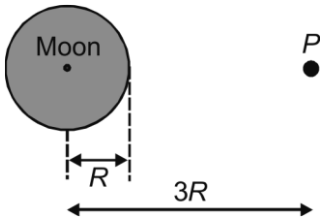
5. Three particles *A*, *B* and *C* each of mass m are lying at the corners of an equilateral triangle of side *L*. If the particle *A* is released keeping the particles *B* and *C* fixed, the magnitude of instantaneous acceleration of *A* is



(1) $\sqrt{3}\frac{Gm^2}{L^2}$ (2) $\sqrt{2}\frac{Gm^2}{L^2}$

(3) $\sqrt{2}\frac{Gm}{L^2}$ (4) $\sqrt{3}\frac{Gm}{L^2}$

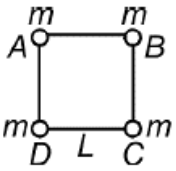
6. A stationary object is released from a point *P* at a distance 3*R* from the centre of the moon which has radius *R* and mass *M*. Which of the following gives the speed of the object on hitting the moon?



(1) $\left(\frac{2GM}{3R}\right)^{1/2}$ (2) $\left(\frac{4GM}{3R}\right)^{1/2}$

(3) $\left(\frac{GM}{3R}\right)^{1/2}$ (4) $\left(\frac{GM}{R}\right)^{1/2}$

7. Four particles *A*, *B*, *C* and *D* each of mass m are kept at the corners of a square of side *L*. Now the particle *D* is taken to infinity by an external agent keeping the other particles fixed at their respective positions. The work done by the gravitational force acting on the particle *D* during its movement is



(1) $2\frac{Gm^2}{L}$ (2) $-2\frac{Gm^2}{L}$

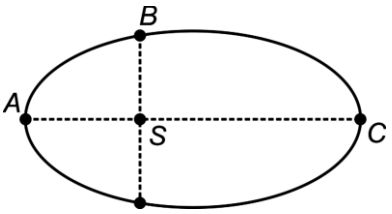
(3) $\frac{Gm^2}{L}\left(\frac{2\sqrt{2}+1}{\sqrt{2}}\right)$ (4) $-\frac{Gm^2}{L}\left(\frac{2\sqrt{2}+1}{\sqrt{2}}\right)$

8. A satellite revolving around earth has kinetic energy E_0, then its potential energy and total energy will be

(1) $-E_0, -2E_0$ (2) $-2E_0, -E_0$

(3) $-E_0, -2E_0$ (4) $-E_0, 2E_0$

9. The kinetic energies of a planet in an elliptical orbit about the sun at positions *A*, *B* and *C* are K_A, K_B and K_C respectively. If *AC* is the major axis and *SB* is perpendicular to *AC* at the position of the sun S as shown in the figure, then



(1) $K_A > K_B > K_C$ (2) $K_B > K_A > K_C$

(3) $K_B > K_C > K_A$ (4) $K_B < K_A < K_C$

10. A satellite of mass m_0 is orbiting around the earth at a height *h* above the surface of the earth. If the mass of the earth is *M* and its radius is *R*, then angular momentum of the satellite is

(1) $m_0\sqrt{GMR}$ (2) $m_0\sqrt{GM(R+h)}$

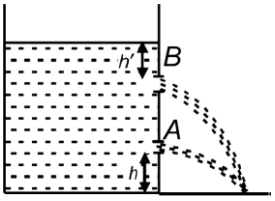
(3) $m_0\sqrt{\frac{GM}{R}}$ (4) $m_0\sqrt{\frac{GM}{R+h}}$

11. Three identical bodies (each mass *M*) are placed at vertices of an equilateral triangle of arm *L*, keeping the triangle as such by which angular speed the bodies should be rotated in their gravitational fields so that the triangle moves along circumference of circular orbit

(1) $\sqrt{\frac{3GM}{L^3}}$ (2) $\sqrt{\frac{GM}{L^3}}$

(3) $\sqrt{\frac{GM}{3L^3}}$ (4) $3\sqrt{\frac{GM}{L^3}}$

12. A tank is filled with water and two holes *A* and *B* are made in it. For getting same range, ratio of *h*/*h*′ is



(1) 2 (2) 1/3

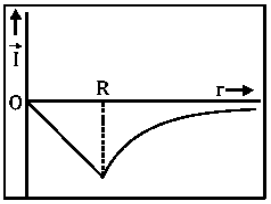
(3) 1/2 (4) 1

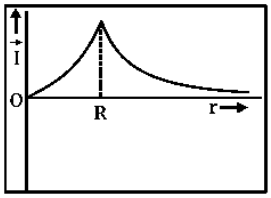
13. If the distance between the centres of earth and moon is D and mass of earth is 81 times that of moon. At what distance from the centre of earth gravitational field will be zero

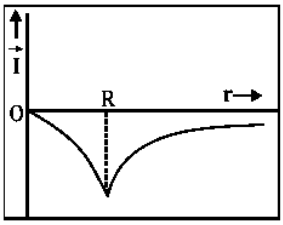
(1) D/2 (2) 2D/3

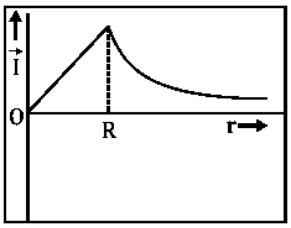
(3) 4D/5 (4) 9D/10

14. Following curve shows the variation of intensity of gravitational field $(\vec{I})$ with distance from the centre of solid sphere (r)

(1) 

(2) 

(3) 

(4) 

15. The value of 'g' reduces to half of its value at surface of earth at a height 'h', then

(1) h = R (2) h = 2R

(3) $h = (\sqrt{2}+1)R$ (4) $h = (\sqrt{2}-1)R$

16. When the radius of earth is reduced by 1% without changing the mass, then the acceleration due to gravity will

(1) increase by 2% (2) decrease by 1.5%

(3) increase by 1% (4) decrease by 1%

17. The ratio of radii of two satellites is p and the ratio of their acceleration due to gravity is q. The ratio of their escape velocities will be

(1) $\left(\frac{q}{p}\right)^{1/2}$ (2) $\left(\frac{p}{q}\right)^{1/2}$

(3) pq (4) $\sqrt{pq}$

18. Two artificial satellites *A* and *B* are at a distance r_A and r_B above the earth's surface. If the radius of earth is R, then the ratio of their speed will be

(1) $\left(\frac{r_B+R}{r_A+R}\right)^{1/2}$ (2) $\left(\frac{r_A+R}{r_B+R}\right)^{2}$

(3) $\left(\frac{r_B}{r_A}\right)^{2}$ (4) $\left(\frac{r_B}{r_A}\right)^{1/2}$

19. Binding energy of moon and earth is

(1) $\frac{GM_eM_m}{r_{em}}$ (2) $\frac{GM_eM_m}{2r_{em}}$

(3) $-\frac{GM_eM_m}{r_{em}}$ (4) $-\frac{GM_eM_m}{2r_{em}}$

20. The maximum and minimum distances of a comet from the sun are 8×10^{12} m and 1.6×10^{12} m respecting. If its velocity when it is nearest to the sun is 60 m/s then what will be its velocity in m/s when it is farthest?

(1) 12 (2) 60

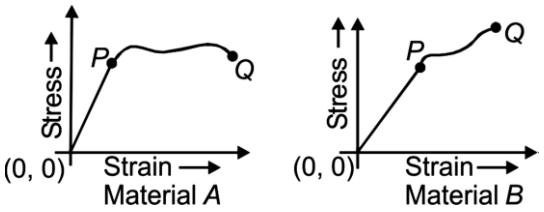
(3) 112 (4) 6

21. An artificial satellite moving in a circular orbit around the earth has a total (kinetic + potential) energy E_0. Its potential energy is

(1) $-E_0$ (2) E_0

(3) $-2E_0$ (4) $2E_0$

22. The stress-strain graphs for two materials A and B are shown in figure. The graphs are drawn to the same scale. Select the correct statement



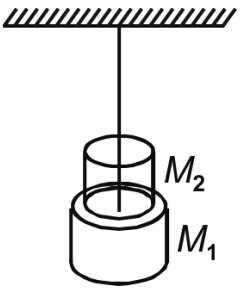
(1) Material A has greater Young's Modulus

(2) Material A is ductile

(3) Material B is brittle

(4) All of these

23. The length of wire, when M_1 is hung from it, is l_1 and is l_2 with both M_1 and M_2 hanging. The natural length of wire is



(1) $\frac{M_1}{M_2}(l_1 - l_2) + l_1$ (2) $\frac{M_2 l_1 - M_1 l_2}{M_1 + M_2}$

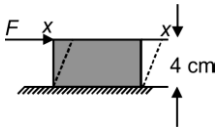
(3) $\frac{l_1+l_2}{2}$ (4) $\sqrt{l_1 l_2}$

24. A wire of length *L* and cross-sectional area *A* is made of material of Young's modulus *Y*. The work done in stretching the wire by an amount x is

(1) $\frac{YAx^2}{L}$ (2) $\frac{YAx^2}{2L}$

(3) $\frac{2YAx^2}{L}$ (4) $\frac{4YAx^2}{L}$

25. A steel plate of face area 1 cm^2 and thickness 4 cm is fixed rigidly at the lower surface. A tangential force F = 10 kN is applied on the upper surface as shown in the figure. The lateral displacement x of upper surface w.r.t. the lower surface is (Modulus of rigidity for steel is 8×10^{11} N / m^2)



(1) 5×10^{-5} m (2) 5×10^{-6} m

(3) 2.5×10^{-3} m (4) 2.5×10^{-4} m

26. The pressure of a medium is changed from 1.01×10^5 Pa to 1.165×10^5 Pa and change in volume is 10% keeping temperature constant. The bulk modulus of the medium is

(1) 204.8×10^5 Pa (2) 102.4×10^5 Pa

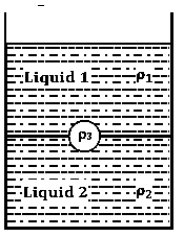
(3) 51.2×10^5 Pa (4) 1.55×10^5 Pa

27. For steel, the breaking stress is 6×10^6 N /m^2 and the density is 8×10^3 kg/m^3. The maximum length of steel wire, which can be suspended without breaking under its own weight is [g = 10 m /s^2]

(1) 140 m (2) 120 m

(3) 75 m (4) 200 m

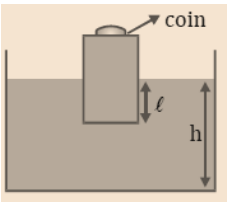
28. A jar is filled with two non-mixing liquids 1 and 2 having densities ρ_1 and ρ_2 respectively. A solid ball, made of a material of density ρ_3, is dropped in the jar. It comes to equilibrium in the position shown in the figure. Which of the following is true for ρ_1, ρ_2 & ρ_3



(1) $\rho_3 < \rho_1 < \rho_2$ (2) $\rho_1 > \rho_3 > \rho_2$

(3) $\rho_1 < \rho_2 < \rho_3$ (4) $\rho_1 < \rho_3 < \rho_2$

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



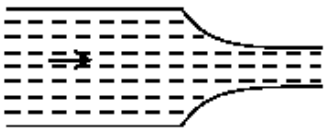
(1) l decreases and h increases

(2) l increases and h decreases

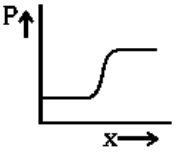
(3) both l and h increase

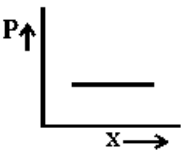
(4) both l and h decrease

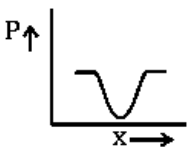
30. Water flows through a frictionless duct with a cross-section varying as shown in figure. Pressure Pat points along the axis is represented by



(1) 

(2) 

(3) 

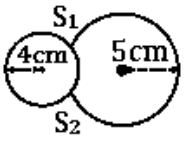
(4) 

31. If the surface tension of a liquid is T and its surface area is increased by A, then the surface energy of that surface will be increased by

(1) AT (2) A/T

(3) A^2T (4) A^2T^2

32. Two soap bubbles of radii r_1 and r_2 equal to 4 cm and 5 cm are touching each other over a common surface S_1S_2 (shown in figure). Its radius will be



(1) 4 cm (2) 20 cm

(3) 5 cm (4) 4.5 cm

33. Internal radius of a capillary tube is 1/28 cm and surface tension of water is 70 dyne/cm, if angle of contact is zero, then water will rise up in the tube up to height.

(1) 4 cm (2) 2 cm

(3) 14 cm (4) 18 cm

34. If a capillary of radius r is dipped in water, the height of water that rises in it is h and its mass is M. If the radius of the capillary is doubled the mass of water that rises in the capillary will be

(1) 4 M (2) 2 M

(3) M (4) M/2

35. Shape of meniscus for a liquid of zero angle of contact is

(1) plane (2) parabolic

(3) hemi-spherical (4) cylindrical

36. A tank is filled by liquid of density ρ upto height *H*. The average pressure on the walls of container is

(1) ρgH (2) $\frac{1}{2}\rho gH$

(3) $\frac{1}{4}\rho gH$ (4) $\frac{1}{8}\rho gH$

37. An open U-tube contains mercury. When 13.6 cm of water is poured into one the arms of the tube, then the mercury rise in the other arm from its initial level is

(1) 1 cm (2) 0.5 cm

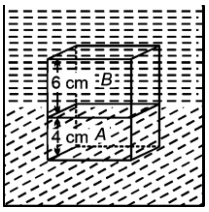
(3) 10 cm (4) 5 cm

38. An object of mass m is floating in a liquid of density σ. If the object is made up of density ρ, then apparent weight of the object in the liquid is

(1) mg (2) $mg\left(1-\frac{\sigma}{\rho}\right)$

(3) $mg\left(1-\frac{\rho}{\sigma}\right)$ (4) Zero

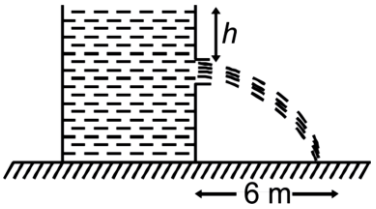
39. A cube of edge length 10 cm is just balanced at the interface of two liquids *A* and *B* as shown in figure. If *A* and *B* has specific gravity 0.6 and 0.4 respectively, then mass of cube is



(1) 240 g (2) 360 g

(3) 480 g (4) 540 g

40. A liquid is coming out from the orifice of tank and falls upto a maximum horizontal distance of 6 m. The height h is equal to



(1) 1.5 m (2) 3.0 m

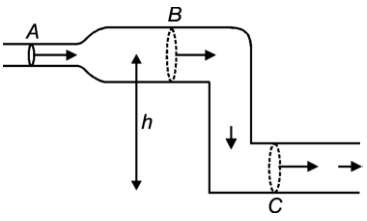
(4) 6.0 m (3) 4.5 m

41 Surface tension of a liquid, at critical temperature, is

(1) Maximum (2) Unchanged

(3) Zero (4) None of these

42. Water is flowing through a channel (lying in a vertical plane) as shown in the figure. Three sections *A*, *B* and *C* are shown. Sections *B* and C have equal area of cross section. If P_A, P_B and P_C are the pressures at *A*, *B* and *C* respectively then



(1) $P_A > P_B > P_C$ (2) $P_A < P_B < P_C$

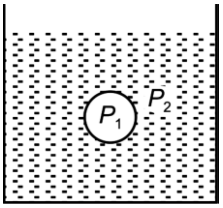
(3) $P_A < P_B = P_C$ (4) $P_A > P_B > P_C$

43. A ball of density σ and radius *r* is dropped on the surface of a liquid of density ρ from certain height. If speed of ball does not change even on entering in liquid and viscosity of liquid is η, then the height from which ball dropped is

(1) $2g\left[\frac{(\sigma-\rho)r}{9\eta}\right]^2$ (2) $\frac{2g(\sigma-\rho)^2r^2}{9\eta}$

(3) $\frac{2(\sigma-\rho)gr^2}{9\eta}$ (4) $2g\left[\frac{(\sigma-\rho)r^2}{9\eta}\right]^2$

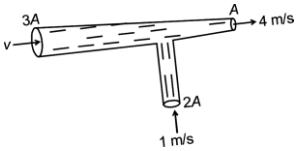
44. A spherical air cavity of radius *R* is inside a liquid of uniform density ρ and surface tension *T* as shown in the figure. The excess pressure inside the cavity is (P_1 is the pressure inside and P_2 is the pressure outside the cavity)



(1) $P_1 - P_2 = \frac{4T}{R}$ (2) $P_1 - P_2 = \frac{8T}{R}$

(3) $P_1 - P_2 = \frac{2T}{R}$ (4) $P_1 - P_2 = \frac{T}{R}$

45. An incompressible liquid is flowing through a horizontal pipe as shown in figure. The magnitude of velocity v is



(1) 1 m/s (2) $\frac{2}{3}$ m/s

(3) $\frac{3}{2}$ m/s (4) 2 m/s

CHEMISTRY

46. One mole of a non-ideal gas undergoes a change of state $(2.0\ \text{atm}, 3.0\ \text{L}, 95\ \text{K}) \rightarrow (4.0\ \text{atm}, 5.0\ \text{L}, 245\ \text{K})$ with a change in internal energy, $\Delta U = 30.0\ \text{L atm}$. The change in enthalpy (ΔH) of the process in L atm is:

(1) 40.0

(2) 42.3

(3) 44.0

(4) Not defined, because pressure is not constant

47. In which of the following cases entropy decreases?

(1) Solid changing to liquid

(2) Expansion of a gas

(3) Crystals dissolve

(4) Polymerisation

48. For the reaction $N_2 + 3H_2 \rightleftharpoons 2NH_3$: ΔH is

(1) $\Delta E - 2RT$ (2) $\Delta E - RT$

(3) $\Delta E + RT$ (4) $\Delta E + 2RT$

49. When one mole of monoatomic ideal gas at T temperature undergoes adiabatic change under a constant external pressure of 1 atm change in volume is from 1 L to 2 L, the final temperature in Kelvin would be

(1) $\frac{T}{2^{(2/3)}}$ (2) $T + \frac{2}{3\times0.0821}$

(3) T (4) $T - \frac{2}{3\times0.0821}$

50. In the combustion of 2.0 g of methane, 25 kcal heat is liberated. Heat of combustion of methane would be

(1) 150 kcal (2) 200 kcal

(3) 250 kcal (4) 350 kcal

51. 1 mole of an ideal gas at $25°C$ is subjected to expand reversibly ten times of its initial volume. The change in entropy of expansion is:

(1) $19.15\ \text{JK}^{-1}\text{mol}^{-1}$ (2) $16.15\ \text{JK}^{-1}\text{mol}^{-1}$

(3) $22.15\ \text{JK}^{-1}\text{mol}^{-1}$ (4) None of these

52. The heat of formation (ΔH_f) of $H_2O(l)$ is equal to

(1) Zero

(2) Molar heat of combustion of $H_2(l)$

(3) Molar heat of combustion of $H_2(g)$

(4) Sum of heat of formation of $H_2O(g)$ and $O_2(g)$

53. A gas expands isothermally and reversibly. The work done by the gas is

(1) Zero

(2) Minimum

(3) Maximum

(4) Equal to work done

54. What is Δn for combustion of 1 mole of benzene, when both the reactants and products are gas at 298 K

(1) 0 (2) 1

(3) 0.5 (4) 1.5

55. Internal energy and pressure of a gas of unit volume are related as

(1) $P = \frac{2}{3}U$ (2) $P = \frac{3}{2}U$

(3) $P = \frac{U}{2}$ (4) $P = 2U$

56. The second law of thermodynamics introduced the concept of

(1) Third law of thermodynamics

(2) Work

(3) Entropy

(4) Internal energy

57. Hess's law of constant heat summation is an application of

(1) Kirchhoff's law

(2) First law of thermodynamics

(3) Second law of thermodynamics

(4) Entropy

58. Heat of formation of $H_2O(g)$ at 1 atm and 25°C is $-243\ kJ.\ \Delta U$ for the reaction, $H_2(g) + \frac{1}{2}O_2(g) \rightarrow H_2O(g)$ at 25°C is

(1) 241.8 kJ (2) -241.8 kJ

(3) - 243 kJ (4) 243 kJ

59. The work done during the process when 1 mole of gas is allowed to expand freely into vacuum is

(1) Zero (2) +ve

(3) –ve (4) Either of these

60. The standard heat of formation of sodium ions in aqueous solution from the following data will be:

Heat of solution $NaOH(aq.)$ from $NaOH(s) = -470.7\ kJ$

Heat of formation of $OH^-(aq.)$ From $OH^-(s) = -228.8\ kJ$

(1) - 251.9 kJ (2) 241.9 kJ

(3) - 241.9 kJ (4) 251.9 kJ

61. An ideal gas expands in volume from $1 \times 10^3 m^3$ to $1 \times 10^{-2} m^3$ at 300 K against a constant pressure of $1 \times 10^5 Nm^{-2}$. The work done is

(1) 270 kJ (2) -900 kJ

(3) -900 J (4) 900 kJ

62. One mole of a gas absorbs $200\ J$ of heat at constant volume. Its temperature rises from $298K$ To $308K$. The change in internal energy is

(1) 200 J (2) -200 J

(3) $200 \times \frac{308}{298} J$ (4) $200 \times \frac{298}{308} J$

63. For an ideal gas, the relation between the enthalpy change and internal energy change at constant temperature is given by

(1) $H = U + PV$ (2) $\Delta H = \Delta U + \Delta nRT$

(3) $\Delta U = \Delta H + P\Delta V$ (4) $\Delta H = \Delta G + T\Delta S$

64. The bond dissociation energy of B—F in BF_3 is $646\ kJ\ mol^{-1}$, whereas that of C—F in CF_4 is $515\ kJ\ mol^{-1}$. The correct reason for higher B—F bond dissociation energy as compared to that of C—F is :

(1) Stronger σ bond between B and F in BF_3 as compared to that between C and F in CF_4

(2) Significant $p\pi - p\pi$ interaction between B and F in BF_3 whereas there is no possibility of such interaction between C and F in CF_4

(3) Lower degree of $p\pi - p\pi$ interaction between B and F in BF_3 than that between C and F in CF_4

(4) Smaller size of B-atom as compared to that of C-atom

65. Energy equivalent to one erg, one joule and one calorie are in order

(1) $1\ erg > 1\ J > 1\ cal$ (2) $1\ erg > 1\ cal > 1\ J$

(3) $1\ cal > 1\ J > 1\ erg$ (4) $1\ J > 1\ cal > 1\ erg$

66. How many cyclic isomers of C_5H_{10} are possible?

(1) 4 (2) 3

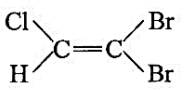
(3) 6 (4) 5

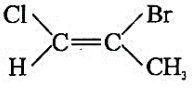
67. The number of isomers for the compound with molecular formula $C_2BrClFI$ is

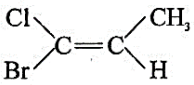
(1) 3 (2) 4

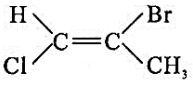
(3) 5 (4) 6

68. Which is a pair of geometrical isomers?

(I) 

(II) 

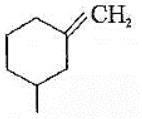
(III) 

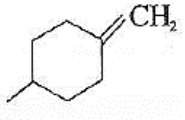
(IV) 

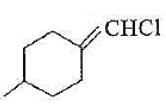
(1) I and II (2) I and III

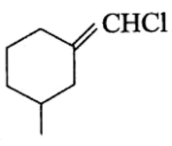
(3) II and IV (4) III and IV

69. The geometrical isomerism is shown by

(1) 

(2) 

(3) 

(4) 

70. Increasing order of stability among the three main conformations (i.e., Eclipse, Anti, Gauche) of 2-fluoroethanol is

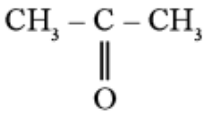
(1) Eclipse, Anti, Gauche

(2) Anti, Gauche, Eclipse

(3) Eclipse, Gauche, Anti

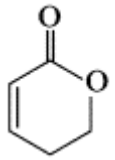
(4) Gauche, Eclipse, Anti

71. Which one of the following compounds cannot show tautomerism?

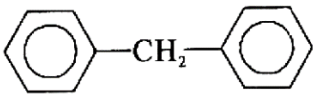
(1) 

(2) $CH_2 = CH — OH$

(3) 

(4) 

72. The molecular formula of diphenylmethane



How many structural isomers are possible when one of the hydrogen is replaced by a chlorine atom?

(1) 6 (2) 4

(3) 8 (4) 7

73. Which of the following compound will show metamerism?

(1) $CH_3 – CO – C_2H_5$ (2) $C_2H_5 – S – C_2H_5$

(3) $CH_3 – O – CH_3$ (4) $CH_3 – O – C_2H_5$

74. The total number of isomer of C_4H_8O is

(1) 3 (2) 4

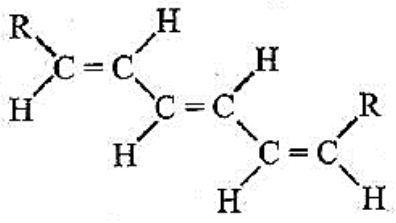
(3) 6 (4) 7

75. The total number of isomers possible for trisubstituted CH_3Br_2Cl is

(1) Six (2) Four

(3) Three (4) Two

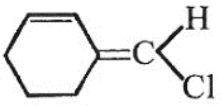
76. Number of the geometrical isomers for the molecule are

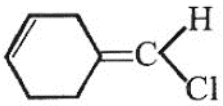


(1) 2 (2) 4

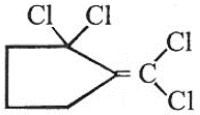
(3) 6 (4) 8

77. Which will not show Geometrical Isomerism?

(1) 

(2) 

(3) 

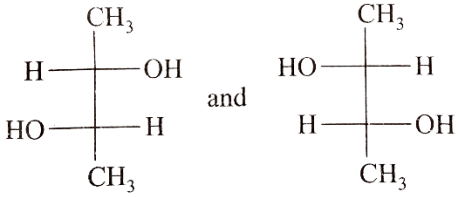
(4) 

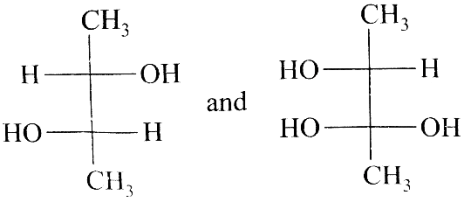
78. The number of stereoisomers for pent-3-en-2-ol is

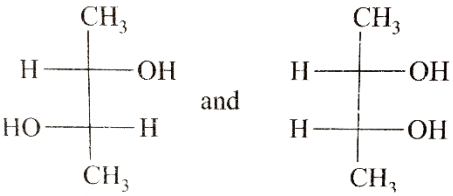
(1) 2 (2) 4

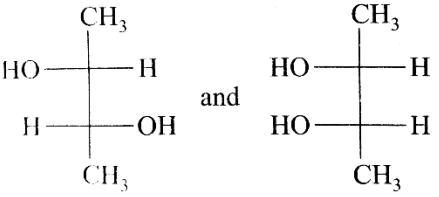
(3) 3 (4) 5

79. Which of the following pairs of compounds are enantiomers?

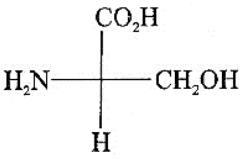
(1) 

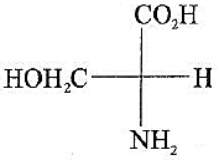
(2) 

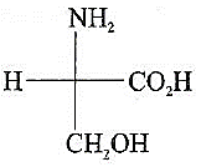
(3) 

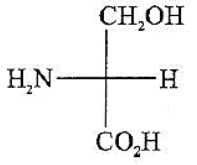
(4) 

80. Among the following L-series is

(1) 

(2) 

(3) 

(4) 

81. IUPAC nomenclature of the given organic compound will be

$(CH_3)_2C(CH_2CH_3)CH_2CH(Cl)CH_3$

(1) 5-Chloro-3,3-dimethylhexane

(2) 4-Chloro-2-ethyl-2-methylpentane

(3) 2-Chloro-4-ethyl-4-methylpentane

(4) 2-Chloro-4,4-dimethylhexane

82. The IUPAC name of $CH_3COCH(CH_3)_2$ is

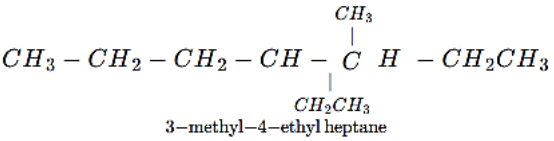
(1) 2-methyl-3-butanone

(2) 4-methylisopropopyl ketone

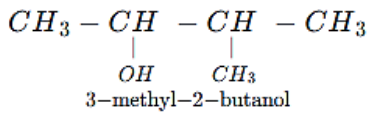
(3) 3-methyl-2-butanone

(4) Isopropyl methyl ketone

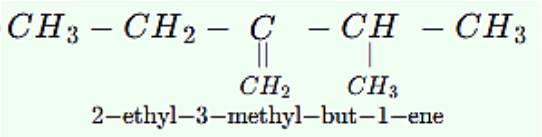
83. Names of some compounds are given. Which one is not in IUPAC system?

(1) 

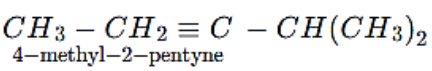
3–methyl–4–ethyl heptane

(2) 

3–methyl–2–butanol

(3) 

2–ethyl–3–methyl–but–1–ene

(4) 
4–methyl–2–pentyne

84. The correct decreasing order or priority for the functional groups of organic compounds in the IUPAC system of nomenclature is

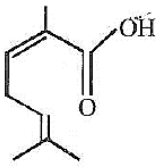
(1) –CHO, –COOH, $–SO_3H$, CONH

(2) –CONH, –CHO, SO_3H, –COOH

(3) $–COOH_2$, $–SO_3H$, $–CONH_2$, –CHO

(4) –SO3H, –COOH, $–CONH_2$, –CHO

85. The IUPAC name of the compound is



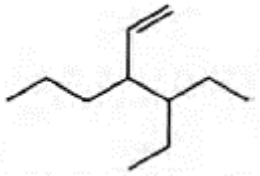
(1) 2-ethyl-3-methyl cyclohexa-1,3-diene

(2) 2,5-dimethyl hepta-2,6-dienoic acid

(3) 2,6-dimethyl hepta-2,5-dienoic acid

(4) 2,3-dimethyl epoxyethane

86. The correct IUPAC name of the compound is



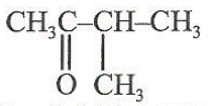
(1) 3-(1-ethyl propyl) hex-1-ene

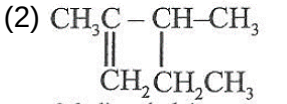
(2) 4-ethyl-3-propyl hex-1-ene

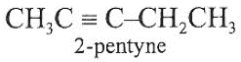
(3) 3-ethyl-4-ethenyl heptane

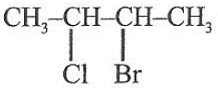
(4) 3-ethyl-4-propyl hex-5-ene

87. The incorrect IUPAC name is

(1) 
2-methyl-3-butanone

(2) 
2,3-dimethyl-1-pentene

(3) 
2-pentyne

(4) 
2-bromo-3-chloro-butane

88. Ethyl methyl ether is

(1) $CH_3 – CH_2 – O – CH_3$

(2) $CH_3 – O – CH_2 – CH_3$

(3) Both (1) and (2)

(4) $CH_3 – CH_2 – O – CH_2 – CH_3$

89. The structure of allyl vinyl thioether is

(1) $CH_2 = CH – CH_2 – S – CH_2 – CH = CH_2$

(2) $CH_2 = CH – S – CH_2 – CH = CH_2$

(3) $CH_2 = CH – S – CH = CH_2$

(4) None of these

90. The IUPAC name of the given structure

(1) 5-Bromo-6-chlorocyclohex-1-en-3-yne

(2) 6-Bromo-5-chlorocyclohexen-3-yne

(3) 6-Bromo-5-chloro-3-cyclohexen-1-yne

(4) 4-Bromo-3-chloro-1-cyclohexen-5-yne

BOTANY

91. Middle lamella is present

(1) Inside the secondary wall

(2) Inside the primary wall

(3) Outside the primary wall

(4) In between secondary and tertiary walls

92. The non-membranous organelles are

(1) Centrioles (2) Ribosomes

(3) Nucleolus (4) All of these

93. The membrane of human RBC has

(1) 52% protein (2) 40% lipids

(3) 40% protein (4) 52% lipids

94. Consider the following statements and choose the correct one

(1) Plant cells have centrioles which are absent in almost all animal cells

(2) Ribosomes are the site of protein synthesis

(3) The middle lamella is layer mainly of calcium carbonate which holds the different neighbouring cells together

(4) In animal cells, steroidal hormones are synthesized by smooth endoplasmic reticulum

95. How many ATP molecules per CO_2 are required at the reduction step of Calvin cycle?

(1) 3 (3) 18 (2) 2 (4) 5

96. In prokaryotic cell,

I. enveloped genetic material is present

II. ribosomes are absent

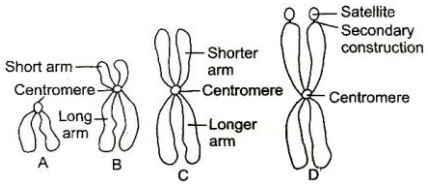
III. an organized nucleus is absent

The correct option is

(1) Only I (2) Only II

(3) Only III (4) I, II and III

97. In the given diagram of types of chromosomes, identify *A-D*



(1) A-Telocentric chromosome, B-Acrocentric chromosome, C-Submetacentric chromosome, D-Metacentric chromosome

(2) A-Acrocentric chromosome, B-Telocentric chromosome, C-Metacentric, chromosome, D-Submetacentric chromosome

(3) A-Submetacentric chromosome, B-Metacentric chromosome, C-Telocentric chromosome, D-Acrocentric chromosome

(4) A-Metacentric chromosome, B-Submetacentric chromosome, C-Acrocentric chromosome, D-Telocentric chromosome

98. In meiosis, chromosome number becomes

(1) Half of its parent chromosome

(2) Same as that of parent chromosome

(3) One fourth of its parent chromosome

(4) One eight of its parent chromosome

99. Select the matched ones.

I. S-phase - DNA replication

II.Zygotene - Synapsis

III.Diplotene - Crossing over

IV.Meiosis - Both haploid and diploid cells

V. G_2-phase - Quiescent stage

(1) I and II only (2) III and IV only

(3) III and V only (4) I, III and V only

100. Which of the following statement(s) is/are not correct about meiosis?

I. Meiosis involves pairing of homologous chromosomes and recombination between them

II. Two diploid cells are formed at the end of meiosis-II

III. Meiosis involves two sequential cycles of nuclear and cell division called meiosis-I and meiosis-II, but only a single cycle of DNA replication

IV. Meiosis-I is initiated after the parental chromosome replication which produce identical sister chromatids at the S-phase

The correct option is

(1) I and III (2) II only

(3) II and III (4) I, II, III and IV

101. Crossing over occurs during

(1) Leptotene (2) Diplotene

(3) Pachytene (4) Zygotene

102. In which of the following phase of cell cycle, mitotic division got arrested?

(1) G_2-phase (2) G_0-phase

(3) S-phase (4) M-phase

103. Differentiated cell remains at which stage?

(1) G_1 (2) G_2

(3) G_0 (4) M

104. Which of the following event distinguishes prophase-I of meiosis from prophase of mitosis?

(1) Nuclear membrane breaks down

(2) Chromosomes become visible

(3) Homologous chromosomes pair up

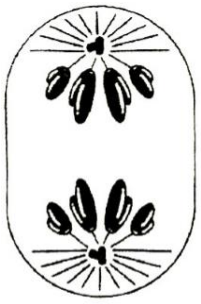
(4) Spindle forms

105. What is the approximate percentage duration of cell cycle that comes under interphase in humans?

(1) 99% (2) 95%

(3) 25% (4) 5%

106. Given diagram indicates which of the following phase of mitosis? Choose the correct option



(1) Interphase (2) Prophase
(3) Metaphase (4) Anaphase

107. The transition between meiosis-I and meiosis-II is
(1) Interkinesis (2) Cytokinesis
(3) Diakinesis (4) Karyokinesis

108. **Gas vacuole, Single envelope system, Cytoskeleton, Non cellulosic wall, Microfilaments, Cytoplasmic streaming, Lack any cell organelles**

How many of the above features are associated with prokaryotic cell?
(1) One (2) Four
(3) Two (4) Three

109. Nucleolus, Golgi complex and ER reform in
(1) Anaphase (2) Metaphase
(3) Telophase (4) Cytokinesis

110. Which of the following is associated with detoxification of drugs and muscle contraction by the release and uptake of Ca^{2+} ions?
(1) Golgi complex (2) RER
(3) SER (4) Free ribosomes

111. Study the organelle given below and identify its function

(1) It is a site for formation of glycoproteins and glycolipids
(2) Site for synthesis of steroidal hormone
(3) These have enzymes that are capable of digesting carbohydrates, proteins, lipids and nucleic acids
(4) It divides intracellular space into two distinct compartments, i.e., luminal and extra luminal cytoplasm

112. Mitochondria and chloroplasts are semi-autonomous as they possess
(1) DNA
(2) DNA + RNA
(3) DNA + RNA + ribosomes
(4) Proteins

113. How many organelles of a eukaryotic cell are considered to have an independent existence without membrane?
(1) 1 (2) 2
(3) 3 (4) 4

114. Consider the following statements and choose the incorrect option
a. Large and more numerous nucleoli are present in cells actively carrying out protein synthesis.
b. Nuclear pores allow bidirectional movement of molecules.
c. Cytoskeleton is a glycolipid structure for mechanical support, motility and maintenance of the shape of the cell.
d. Steroidal hormones are synthesized by Golgi complex.
(1) a and b (2) b and c
(3) c and d (4) a and d

115. The larger sub-unit of a ribosome is found to contain 28S, 5.8S and 5S types of RNA. This ribosome is found in
(1) Bacterium (2) Mitochondrion
(3) Animal cell (4) Chloroplast

116. Organelle lacking DNA, but capable of duplication is
(1) Ribosome (2) Centriole
(3) Chloroplast (4) Nucleus

117. Which of the following is a simplified equation of photosynthesis?
(1) $CO_2 + 2H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} C_5H_{10}O_4 + H_2O + O_2 \uparrow$
(2) $CO_2 + 2H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} (CH_2O)_n + O_2 \uparrow$
(3) $CO_2 + 2H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} C_3H_6O_3 + CO_2 + O_2 \uparrow$
(4) $CO_2 + 2H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} (CH_2O)_n + H_2O + O_2 \uparrow$

118. As compared to a C_3-plant, how many additional molecules of ATP are needed for net production of one molecule of hexose sugar by C_4-plants?
(1) 2 (2) 6
(3) 0 (4) 12

119. The law of limiting factors was proposed with particular reference to photosynthesis. Identify the scientist, who proposed this law?

(1) Calvin (2) Weismann

(3) Emerson (4) Blackman

120. PEP carboxylase

I. is involved in atleast some CO_2 fixation in both C_3 and C_4-plants

II. Catalyses the reaction of fixing CO_2 into pyruvic acid in bundle sheath cells

III. is capable of fixing CO_2 more efficiently at lower atmospheric CO_2 concentration than RuBP carboxylase

Select the correct option

(1) I and II (2) II and III

(3) I, II and III (4) Only III

121. PS is made up of which of the following?

(1) Reaction centre

(2) Antenna molecule

(3) Both (1) and (2)

(4) Reaction centre and H_2O

122. If a meiospore has 20 picograms DNA then what was the DNA content in its meiocyte at G_1, and S phase respectively?

(1) 20, 40 (2) 40,80

(3) 20, 80 (4) 40, 40

123. **Assertion (A) :** When light is made to split into its spectral components and then used to illuminate Cladophora, aerobic bacteria accumulate mainly in the region of blue and red light of the split spectrum.

Reason (R) : Plants absorb red and blue lights only.

(1) Both (A) and (R) are true and (R) correctly explains (A)

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

(3) Both (A) and (R) are true but (R) does not explain (A) correctly

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

124. I. Tomato

II. Black pepper

III. Mango

From the above option choose the correct answer in respect of green-house crops

(1) I and III (2) III and II

(3) I, II and III (4) I and II

125. In T.W. Engelmann experiment of action spectrum of chlorophyll, bacteria showed

(1) Chemotactic movement

(2) Magnetotactic movement

(3) Aerotactic movement

(4) Phototactic movement

126. PCO cycle

(1) Brings about assimilation of CO_2

(2) Is favoured by high O_2 concentration

(3) Is an anabolic process

(4) Releases O_2

127. Which of the following is concerned with carbon dioxide fixation?

(1) Krebs cycle (2) Calvin cycle

(3) Ornithine cycle (4) Glycolysis

128. Rubisco enzyme is absent in

(1) Mesophyll cell of C_4-plants

(2) Bundle sheath cell of C_4-plants

(3) C_3-plants

(4) C_4-plants

129. I. H_2S not H_2O is involved in photosynthesis of sulphur bacteria

II. ATP is produced during light reaction *via* chemiosmosis

III. Absence of light leads to the stoppage of photosynthesis

IV. Calvin cycle occurs in grana

Select the correct option

(1) II, III and IV (2) I, III and IV

(3) I, II and IV (4) I, II and III

130. In C_4-plants, the bundle sheath cells

(1) Have thin walls to facilitate gaseous exchange

(2) Have large intercellular spaces

(3) Are rich in PEP carboxylase

(4) Have a high density of chloroplasts

131. What is the wavelength of radiations in visible spectrum?

(1) 400-700 nm (2) 400-800 nm

(3) 390-760 nm (4) 760-390 nm

132. Which of the following is not related to photorespiration?

(1) Lysosome (2) Chloroplast

(3) Peroxisome (4) Mitochondria

133. **Assertion (A) :** DNA replication occurs in postmitotic gap phase in plant cell.

Reason (R) : DNA polymerase is most active in synthetic phase of plant cell only.

(1) Both (A) and (R) are true and (R) correctly explains (A)

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

(3) Both (A) and (R) are true but (R) does not explain (A) correctly

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

134. Assertion (A) : As a result of synapsis each gene is brought into close contact with its allele located on homologous chromosomes.

Reason (R) : Synaptonemal complex separates paired homologous chromosomes.

(1) Both (A) and (R) are true and (R) correctly explains (A)

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

(3) Both (A) and (R) are true but (R) does not explain (A) correctly

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

135. Assertion (A) : The reaction centre is similar in both the pigment systems.

Reason (R) : Chlorophyll a is present in both pigment systems which receives energized electron from LHC.

(1) Both (A) and (R) are true and (R) correctly explains (A)

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

(3) Both (A) and (R) are true but (R) does not explain (A) correctly

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

ZOOLOGY

136. How many statements are incorrect?

(a) Methods of locomotion performed by animals do not vary with their habitats and the demand of the situation.

(b) Macrophages exhibit ciliary movement

(c) Locomotion do not require co-ordinated activity of muscular, skeletal and neural system

(d) About 50-60 percent of body weight of a human adult is contributed by muscles.

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

137. Read the following statements :

(a) Based on appearance, cardiac muscles are unstriated.

(b) Cardiac muscles are involuntary in nature as the nervous system control their activities directly.

(c) Skeletal muscles fibre is syncytium as the sarcoplasm contain single nucleus.

(d) Each organized skeletal muscle in our body is made of a number of fascicles held together by a common reticuluous connective tissue layer called fascia.

(e) Sarcoplasmic reticulum of muscle fibre is the store house of calcium ions.

Find the correct answer

(1) (a), (b), (d) and (e) are correct statement

(2) (b), (c) and (d) are incorrect statement

(3) (c) and (e) are correct statement

(4) Only (d) is correct statement

138. Which one of the following is correct for red muscle fibre

(a) Myoglobin abundant

(b) Plenty of Mitrochondria present

(c) Anaerobic muscle

(d) More Sarcoplsamic reticulum

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

(3) (b) and (e) (4) (b) and (c)

139. Read the following statement?

(1) Scapula is a large triangular flat bone situated in dorsal part of thorax between the second and the seventh ribs.

(2) Each coxal bone is formed by the fusion of three bones-ileum, ischium and pubis

(3) The two halves of the pelvic girdle meet dorsally to form pubic symphysis containing fibrous cartilage

(4) Osteoporosis is age related disorder characterized by decreased bone mass and decreased chances of fractures.

Find the correct answer

(1) (1), (2), (3) and (4) are correct

(2) (1), (2) and (3) are incorrect

(3) (1) and (2) are correct

(4) (2), (3) and (4) are incorrect

140. Which one of the following is correct

(1) In our body the neural system and the endocrine system jointly co-ordinate and integrate all the activities of the organs so that they function in unsynchronized fashion.

(2) Electrical synapses are common in our system.

(3) Ventral portion of mid brain consist of mainly of four round swelling called corpora quadrigemina.

(4) Association areas are responsible for memory and communication.

141. Development and maturation of central nervous system, erythropoiesis, metabolism of carbohydrate, proteins and fats are caused by which hormone

(1) Adrenaline (2) Thyroxine

(3) T.S.H. (4) Androgens

142. Name the hormone that has no role in menstruation.

(1) LH (2) FSH

(3) GH (4) TSH

143. Which of the following hormone is synergistic

(a) Epinephrine and Glycogen

(b) Erythropoietin & Testosterone

(c) FSH & Testosterone

(d) PTH & Calcitonin

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

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

144. Statements about the mechanism of muscle contraction are given below.

I. Acetylcholine is released when the neural signal reaches the motor end plate.

II. Muscle contraction is initiated by a signal sent by CNS via a sensory neuron.

III. During muscle contraction isotropic band gets elongated.

IV. Repeated activation of the muscles can lead to lactic acid accumulation.

Identify the correct statement.

(1) I and IV are correct

(2) I and III are correct

(3) II and III are correct

(4) I, II, and III are correct

145. Ca^{2+} bind …A… in skeletal muscles and leads to the exposure of binding site for …B… on the filament …C…

Identify A, B and C, so as to complete the given statements

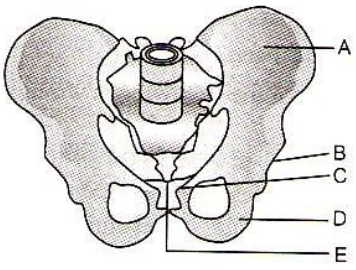
(1) A-troponin, B-actin, C-relaxin

(2) A-actin, B-myosin, C-troponin

(3) A-troponin, B-myosin, C-actin

(4) A-tropomyosin, B-myosin, C-actin

146. In the pelvic girdle of man A, B, C, D and E respectively represent.



(1) A-Pubis ; B-acetabulum ; C-Ilium ; D-ischium ; E-Pubic symphysis

(2) A-ilium ; B-acetabulum ; C-Pubis ; D-ischium ; E-Pubic symphysis

(3) A-Ischium ; B-acetabulum ; C-pubis D-ilium ; E-ischium

(4) A-ilium ; B- acetabulum ; C-Pubic symphysis ; D-ischium ; E-pubis

147. Choose the correct statements regarding muscle proteins

I. Actin is a thin filament and made up of two F-actins

II. The complex protein, tropomyosin is distributed at regular intervals of troponin

III. Myosin is a thick filament which is not a polymerized protein

IV. The globular head of meromyosin consists of Light Meromyosin (LMM)

Option containing correct statement is

(1) I, II and III (2) I, II and IV

(3) Only I (4) II and IV

148. Which of the following statements regarding locomotion and movements is wrong?

(1) All the locomotion are movements

(2) All the movements are locomotion

(3) Locomotion and movements in higher organisms are brought by skeletal muscles

(4) None of the above

149. Which of the following statement Is/ are correct / incorrect?

I. A-bands of the muscle is dark and contain myosin.

II. I-bands are the light bands and contain actin.

III. During muscle contraction, the A-band contracts.

IV. The part between the two successive Z-lines is called as sarcomere.

V. The central part of thin filament, not overlapped by thick filament is called H-zone.

(1) I, II, and III are correct, while IV and V are incorrect

(2) I, III, V are correct, while II, IV are incorrect

(3) I, II and IV are correct, while III and V are incorrect

(4) I, II, III and V are correct, while IV is incorrect

150. Cross arms of the myosin monomer consists of

(1) Outward projection of G-actin filament

(2) Outward projection of the head region of meromyosin

(3) Outward projection of the tail region of meromyosin

(4) Both (2) and (3)

151. Which of the following option shows correct order of some stages of muscle contraction from the beginning to the end of the process?

(1) stimuli → Neurotransmitter secretion → Release of Ca^{2+} → Cross bridges formation → Excitation of T-system → Sliding of action filaments

(2) Stimuli → Neurotransmitter secretion → Excitation of T-system → Release of Ca^{2+} → Cross bridges formation → Sliding of actin filaments → 'H' band diminishes

(3) Stimuli → Excitation of T-system → Neurotransmitter secretion → Cross bridges formation → sliding of action filaments → 'H' band diminishes

(4) Stimuli → Neurotransmitter secretion → Cross bridges formation → Excitation of T-system → Sliding of action filaments

152. Fused vertebrae in human are

I. Sacral II. Coccygeal

III. Thoracic IV. Cervical

V. Lumber

(1) I and II (2) III and IV

(3) IV and V (4) II and V

153. An acromian process is characteristically found in the

(1) Pelvic girdle of mammals

(2) Skull of frog

(3) Pectoral girdle of mammals

(4) Sperm of mammals

154. Arrange the following steps of muscle contraction in the sequence of events occurring first

I. Receptor sites on sarcolemma

II. Nerve impulse

III. Release of Ca^{2+}

IV. Acetylcholine release

V. Shortening of sarcomere

VI. Synaptic cleft

VII. Spread of impulse over sarcolemma on T-tubule

The correct option is

(1) II → IV → VI → I → VII → III → V

(2) II → IV → I → VI → VII → III → V

(3) II → IV → I → VI → VII → V → III

(4) IV → II → I → VI → VII → V → III

155. Choose the correct properties of muscle fibres

I. Muscle fibre is lined by the plasma membrane called sarcolemma.

II. Cytoplasm of the muscle fibre is called protoplasm.

III. Sarcolemma of the muscle fibre encloses the sarcoplasm.

IV. Muscle fibre is syncytium

Select the correct option

(1) All except II (2) All except I

(3) All except III (4) All except IV

156. Which of these processes occur during repolarisation of nerve fibre?

I. Open Na^+ channel

II. Closed Na^+ channel

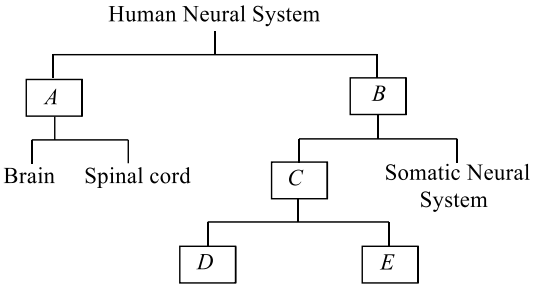
III. Closed K^+ channel

IV. Open K^+ channel

(1) II and IV (2) I and III

(3) II and III (4) I and II

157. The diagram given below is the functional organization of the human nervous system. identify *A*, *B*, *C*, *D* and *E* in the figure



(1) A-PNS, B-CNS, C-ANS, D-Sympathetic nervous system, E-Parasympathetic nervous system

(2) A-ANS, B-CNS, C-PNS, D-Sympathetic nervous system, E-Parasympathetic nervous system

(3) A-CNS, B-PNS, C-ANS, D-Sympathetic nervous system, E-Parasympathetic nervous system

(4) A-ANS, B-PNS, C-ANS, D-Sympathetic nervous system, E-Parasympathetic nervous system

158. During the transmission of nerve impulse through a nerve fibre, the potential on the inner side of the plasma membrane has which type of electric charge?

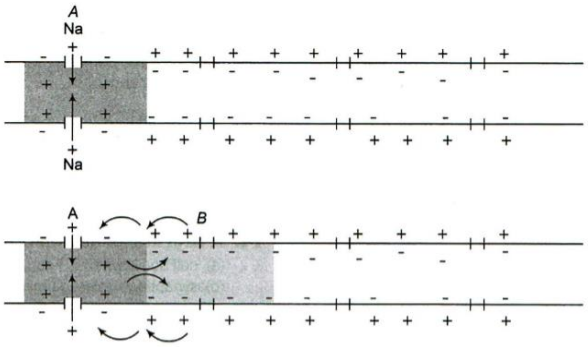
(1) First negative, then positive and again back to negative

(2) First positive, then negative and continue to be negative

(3) First negative, then positive and continue to be positive

(4) First positive, then negative and again back to positive

159. Given is the diagrammatic representation of impulse conduction through an axon (at points A and B). View the diagram and arrange the steps of impulse conduction



I. The polarity of the membrane at site A is reversed and depolarized, i.e., the outer surface becomes negatively charged and the innerside becomes positively charged, generating nerve impulse

II. A stimulus causes disturbance to the membrane at site of A nerve fibre resulting in leakage of Na^+ ions inside the nerve fibre

III. On the outer surface, current flows from site B to site A to complete the circuit of current flow. Hence, the polarity at the site is reversed, and an action potential is generated at site B. The impulse (action potential) generated at site A arrives at site B. The sequence is repeated along the length of the axon and consequently the impulse is conducted.

IV. Immediately ahead, the axon (e.g., site B) membrane has a positive charge on the outer surface and a negative charge on its inner surface. As a result, a current flows on the inner surface from site A to site B

The correct option is

(1) I → II → IV → III (2) II → I → III → IV

(3) II → I → IV → III (4) I → IV → III → II

160. Choose the incorrect options regarding white matter of the brain.

I. White matter of the brain is white in colour

II. White matter of the brain is white in colour but sometimes it is found to be grey

III. White matter of the brain is mostly formed by medullated nerve fibres.

IV. White matter of the brain is formed of cell bodies of nerve fibres

(1) I and III (2) II and IV

(3) I and IV (4) II and III

161. The correct sequence of meetings of brain from outside to inside is

(1) duramater → arachnoid → piamater

(2) arachnoid → duramater → piamater

(3) piamater → duramater → arachnoid

(4) duramater → piamater → arachnoid

162. $Na^+ - K^+$ pump is found in membranes of many cells, like nerve cells. It works against electrochemical gradient and involve of ATP used

(1) 3 ions of Na^+ are pumped out and $2K^+$ are taken in

(2) 3 ions of Na^+ are taken in and $2K^+$ are pumped out

(3) 2 ions of Na^+ are thrown out and $3K^+$ are absorbed

(4) 3 ions of K^+ are absorbed, $3Na^+$ are pumped out

163. Consider the statements as True/False

I. The axoplasm inside the axon contains high concentration of K^+ and negatively charged proteins

II. The axoplam inside the axon contains low concentration of Na^+.

III. The fluid outside the axon contains a low concentration of K^+.

IV. The fluid outside the axon contains a high concentration of Na^+ and negatively charged proteins.

The correct option is

(1) I-True, II-False, III-False, IV-True

(2) I-True, II- True, III-False, IV- False

(3) I-True, II- True, III- True, IV- False

(4) I- False, II- True, III-False, IV- False

164. Which of the following is correct in case of chemical synapses?

I. The membranes of the pre and postsynaptic neurons are separated by a gap called synaptic cleft.

II. Chemicals called neurotransmitters are involved in the transmission of impulses.

III. Impulse transmission in chemical synapse is faster than that across an electrical synapse.

IV. Chemical synapses are rare in our system.

(1) I, II and IV (2) II and III

(3) I and II (4) I, II, III and IV

165. Hypothalamus controls

I. urge for eating and drinking

II. thermoregulation

III. hormones production that regulates the secretion of pituitary gland

(1) I and III are correct

(2) II and III are correct

(3) I and II are correct

(4) I, II and III are correct

166. Inner part of cerebral cortex is referred as

(1) White matter

(2) Grey matter

(3) Both (1) and (2)

(4) Non-myelinated nerve fibres

167. I. Glucagon

II. Epinephrine

III. Steroid hormone

IV. Idothyronine

Among the given hormones which needs secondary messenger

(1) I and III (2) III and IV

(3) I and II (4) IV and I

168. Correct order of action of hydrophilic hormones

I. Hormones bind to plasma membrane

II. Physiological response

III. Biochemical response

IV. Generation of secondary messenger

Choose the correct option

(1) I, II, III, IV (2) II, I, III, IV

(3) I, IV, III, II (4) III, I, II, IV

169. I. Somatostatin inhibits intestinal absorption of glucose

II. Leydig's cell secrete progesterone

III. Melatonin is secreted by pineal gland

IV. Myxoedema is a thyroid disorder

V. Neurohypophysis secreted ACTH

Select the correct statements and choose the option

(1) I, III and IV (2) II, III and V

(3) I, IV and V (4) II, IV and V

170. I. Hormones are non-nutrient chemicals

II. Hormones act as intracellular chemicals

III. Hormones are produced in moderate quantity

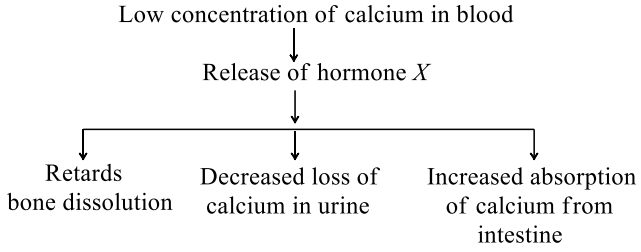
IV. Hormones may be proteins, steroids, glycoproteins or biogenic amines

Choose the option with written above correct statements

(1) I and II (2) II and III

(3) III and IV (4) I and IV

171. Name the hormone X



(1) PTH (2) Adrenal hormone

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

172. I. The adrenal cortex secretes many hormones called corticoids

II. Corticoids involved in carbohydrate metabolism are called glucocorticoids

III. Cortisol is main glucocorticoids

IV. Aldosterone is the main mineralocorticoids

V. TCT is hyperglycemic agent (factor)

Select the correct combination from the given options

(1) I, II and III (2) II, III and IV

(3) I, III and IV (4) I, II, III and IV

173. According to accepted concept of hormone action, if receptor molecules are removed from target organs, then the target organ will

(1) Continue to respond to hormone but in opposite way

(2) Continue to respond to the hormone without any difference

(3) Continue to respond to hormone but will require higher concentration

(4) Not respond to the hormone

174. Which of the following given organs are influenced by activity of PTH?

The option containing all correct answers is

I. Kidney II. Bone III. Muscle IV. Intestine V. Brain

(1) I, II, III and IV (2) I, II, III and V

(3) I, IV and V (4) II, III, IV and V

175. Which of the following statements is correct regarding hypothalamic control of pituitary function?

(1) All the hypothalamic hormones are synthesized and secreted by neurons.

(2) Blood flows from the anterior pituitary to the hypothalamus in the portal vessels.

(3) The hypothalamic releasing hormones reach the general circulation in significant amounts.

(4) Loss of dopaminergic neurons in the hypothalamus is likely to lead to a fall in the secretion of prolactin.

176. Which of the following statements are true/false

I. Calcitonin regulates the metabolism of calcium.

II. Oxytocin stimulates contraction of uterine muscles during birth.

III. Grave's disease is caused by malfunctioning of adrenal gland.

IV. ADH stimulates absorption of water and increase the urine production.

(1) I and III are true; II and IV are false

(2) I and II are true; III and IV are false

(3) I and IV are false; II and IV are true

(4) I, II and III are true; IV only false

177. Which of the following hormones have the direct effect on BP (Blood Pressure)?

I. Thymosin II. PRL

III. MSH IV. Adrenaline

V. Non-adrenaline

Select the option containing the correct pair

(1) I and II (2) III and IV

(3) IV and V (4) I and IV

178. I. Increased alertness

II. Pupillary dilation

III. Raising of hairs

IV. Sweating

All of the above written physiological processes are regulated by

(1) Adrenaline (2) Norepinephrine

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

179. I. ACTH II. GH III. MSH IV. FSH

V. LH VI. Oxytocin

Which of the above hormones are polypeptide or proteinaceous in nature?

Choose the correct option

(1) I, II, III and IV (2) III, IV, V and VI

(3) I, II, III, IV, V and VI (4) I, II, III and VI

180. I. Regulation of BMR

II.Supports the process of RBC formation

III.Controls the metabolism of carbohydrates, proteins and fat

IV. Maintenance of water and electrolyte balance

V. Secretion of TCT hormone

Function written above belong to which of the following gland

(1) Thyroid gland (2) Parathyroid gland

(3) Adrenal gland (4) Pituitary gland