Free Mock
Test 01 - NEET
(Target: NEET 2024)

MOTOINITE

मोशन है, तो भरोसा है

1. The displacement of a particle varies according to the relation $x = 4 (\cos\pi t + \sin\pi t)$. The amplitude of the particle is :-

(1) 8   (2) -4

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

2. A mass of 1 kg is suspended by a string A. Another string C is connected to its lower end (see figure). If a sudden jerk is given to C, then

(1) The portion AB of the string will break

(2) The portion BC of the string will break

(3) None of the strings will break

(4) The mass will start rotating

3. A solid metallic sphere has a charge $+3Q$. Concentric with this sphere is a conducting spherical shell having charge $-Q$. The radius of the sphere is a and that of the spherical shell is $b(> a)$. What is the electric field at a distance $r(a < r < b)$ from the centre?

(1) $\frac{1}{4\pi\varepsilon_0}\frac{Q}{r}$ (2) $\frac{1}{4\pi\varepsilon_0}\frac{3Q}{r}$

(3) $\frac{1}{4\pi\varepsilon_0}\frac{3Q}{r^2}$ (4) $\frac{1}{4\pi\varepsilon_0}\frac{Q}{r^2}$

4. If pressure P, velocity V and time T are taken as fundamental physical Quantities, the dimensional formula of force is :-

(1) PV^2T^2 (2) $P^{-1}V^2T^2$

(3) PVT^2 (4) $P^{-1}VT^2$

5. The ratio of coefficient of isothermal and adiabatic elasticities of a gas is–

(1) γ

(2) γ^2

(3) $1 / \gamma$

(4) $1 / \gamma^2$

6. Two graphs of the same harmonic wave are shown below. The graph (A) on the left shows the displacement of wave y, as a function of position x for a given instant of time. The graph (B) on the right shows the displacement of wave as a function ot time 't' for a given position. The speed of the wave is

(1) 5.0 cms^{-1} (2) 0.5 cms^{-1}

(3) 0.4 cms^{-1} (4) 4.0 cms^{-1}

7. The work done to carry a charge of -5.0 C from A to B is 10 Joule. The relation of potential between the two points and potential difference will be-

(1) B is at higher potential than A by 2 volt

(2) A is at higher potential than B by 2 volt

(3) A has potential 50 volts greater than that of B

(4) B has potential 50 volts greater than that of A

8. In a projectile motion, velocity at maximum height is :

(1) $\frac{u\cos\theta}{2}$ (2) $u \cos \theta$

(3) $\frac{u\sin\theta}{2}$ (4) None of these

9. A cylinder of capacity 20 L is filled with H_2 gas. The total average kinetic energy of translatory motion of its molecules is 1.5×10^5 J. The pressure of hydrogen in the cylinder is-

(1) $2 \times 10^6 \text{ N/m}^2$ (2) $3 \times 10^6 \text{ N/m}^2$

(3) $4 \times 10^6 \text{ N/m}^2$ (4) $5 \times 10^6 \text{ N/m}^2$

10. A diwali rocket is ejecting 0.05 kg of gases per second at a velocity of 400 m/sec. The accelerating force on the rocket is

(1) 20 dynes   (2) 20 N

(3) 22 dynes   (4) 1000 N

11. Four point masses, each of value m, are placed at the corners of a square ABCD of side l . The moment of inertia of this system about an axis passing through A and parallel to BD is
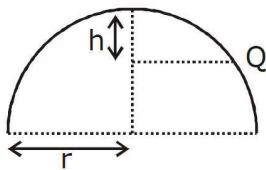
(1) $2\,ml^2$ (2) $\sqrt{3}\,ml^2$

(3) $3m\,l^2$ (4) ml^2

12. In the circuit shown in figure, the potentials of A, B, C and D respectively will be :-
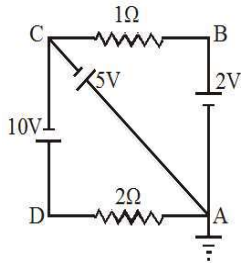
(1) 2V, 0, 5V, 15V   (2) 0, 2V, 15V, 5V

(3) 0, 2V, -5V, 5V   (4) 0, 2V, −5V, 15 V

13. A small body of mass m slides without friction from the top of a hemispherical cup of radius r as shown in the following figure. If it leaves the surface of the cup at a vertical distance 'h' below the highest point, the

(1) h = r   (2) h = r/3

(3) `h = r /2   (4) h = 2r /3

14. A Carnot engine having an efficiency of $\frac{1}{10}$ is being used as a refrigerator. If the work done on the refrigerator is 10 J, the amount of heat absorbed from the reservoir at lower temperature is :

(1) 1J   (2) 100J

(3) 99J   (4) 90J

15. A force $\vec{F} = \left(3t\hat{i} + 5\hat{j}\right)$ N acts on a body due to which its position varies as $\vec{s} = \left(2\,t^2\hat{i} - 5\hat{j}\right)$. Work done by this force in initial 2 sec?

(1) +7 J   (2) -7 J

(3) +32 J   (4) −32 J

16. If the distance between two masses is doubled, the gravitational attraction between them.

(1) Is doubled   (2) Becomes four times

(3) Is reduced to half   (4) Is reduced to a quarter

17. In the arrangement of 3 bulbs of (50W, 100V) each as shown in the figure total power consumption will be :-
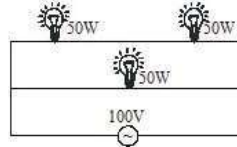
(1) 150W   (2) 100W

(3) 25W   (4) 75W

18. A ray of light passes from vacuum into a medium of refractive index n. If the angle of incidence is twice the angle of refraction, then the angle of incidence is:

(1) $\cos^{-1}(n/2)$ (2) $\sin^{-1}(n/2)$

(3) $2\cos^{-1}(n/2)$ (4) $2\sin^{-1}(n/2)$

19. The force constant of a wire is k and that of another wire is 2k. When both the wires are stretched through same distance, then the work done

(1) $W_2 = 2W^2_1$ (2) $W_2 = 2W_1$

(3) $W_2 = W_1$ (4) $W_2 = 0.5W_1$
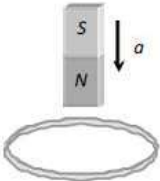
20. A planet has twice the density of earth but the acceleration due to gravity on its surface is exactly the same as on the surface of earth. Its radius in terms of earth R will be

(1) $\frac{R}{4}$ (2) $\frac{R}{2}$

(3) $\frac{R}{3}$ (4) $\frac{R}{8}$

21. Two identical parallel plate capacitors are connected in series and then joined in series with a battery of emf 100V. A slab of dielectric constant K = 3 is inserted between the plates of the first capacitor. Then the potential difference across the capacitors will be respectively-

(1) 25V, 75V   (2) 75V, 25V

(3) 20V, 80V   (4) 50V, 50V

22. The critical angle between an equilateral prism and air is 45°. If the incident ray is perpendicular to the refracting surface, then

(1) After deviation it will emerge from the second refracting surface
(2) It is totally reflected on the second surface and emerges out perpendicularly from third surface in air
(3) It is totally reflected from the second and third refracting surfaces and finally emerges out from the first surface
(4) It is totally reflected from all the three sides of prism and never emerges out

23. A body of mass 1 kg starts moving from rest at t = 0, in a circular path of radius 8 m. Its kinetic energy varies as a function of time as : K.E. = $2t^2$ Joules, where t is in seconds. Then

(1) tangential acceleration = $4m/s^2$
(2) power of all forces at t = 2 sec is 8 watt
(3) first round is completed in 2 sec.
(4) tangential force at t = 2 sec is 4 newton.

24. A metallic ring is attached with the wall of a room. When the north pole of a magnet is brought near to it, the induced current in the ring will be

(1) First clockwise then anticlockwise
(2) In clockwise direction
(3) In anticlockwise direction
(4) First anticlockwise then clockwise

25. Two ions have equal masses but one is singly ionized and second is doubly ionized. They are projected from the same place in a uniform transverse magnetic field with same velocity then:
(i) Both ions will go along circles of equal radii
(ii) The radius of circle described by the single ionized charge is double of radius of circle described by doubly ionized charge
(iii) Both circle do not touches to each other
(iv) Both circle touches to each other

(1) i, iii   (2) ii, iv
(3) ii, iii   (4) i, iv

26. A lens of large focal length and large aperture is best suited as an objective of an astronomical telescope since:

(1) a large aperture contributes to the quality and visibility of the images.
(2) a large area of the objective ensures better light gathering power.
(3) a large aperture provides a better resolution.
(4) All the above.

27. In a Young's double slit experiment sources of equal intensities are used. Distance between slits is d and wavelength of light used is $\lambda(\lambda << d)$. Angular separation of the nearest points on either side of central maximum where intensities becomes half of the maximum value is

(1) $\frac{\lambda}{d}$ (2) $\frac{\lambda}{2d}$
(3) $\frac{\lambda}{4d}$ (4) $\frac{\lambda}{6d}$

28. If two coherent light waves produce minima of 5th order, the path difference between the waves is-

(1) 5λ (2) $5\lambda/2$
(3) $7\lambda/2$ (4) $9\lambda/2$

29. Which one of the following waves cannot be polarized?

(1) radio waves
(2) X-rays
(3) transverse waves in a string
(4) longitudinal waves in a gas

30. If the wavelength of the incident radiation is increased from 300 nm to 301 nm, then find the corresponding change in the stopping potential

(1) $\Delta V = -0.674$ V   (2) $\Delta V = -0.487$V
(3) $\Delta V = -0.272$ V   (4) $\Delta V = -0.0137$ V

31. An electron moving with a velocity of 10^6 m/s in the X-direction enters a region of the uniform magnetic field of strength 0.2 T in the Y-direction. Then its de-Broglie wavelength (in the magnetic field region in comparison to outside)-

(1) increases   (2) decreases
(3) remains the same   (4) nothing can be predicted

32. A small coin is resting on the bottom of a beaker filled with a liquid. A ray of light from the coin travels upto the surface of the liquid and moves along its surface how fast light is travelling in liquid. (see figure).
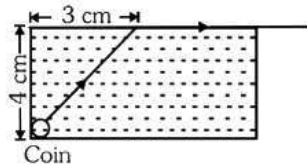

(1) 1.2×10^8 m/s
(2) 1.8×10^8 m/s
(3) 2.4×10^8 m/s
(4) 3.0×10^8 m/s

33. Electrons accelerated from rest by a potential difference of 12.75 V, are bombarded on a mono-atomic hydrogen gas. Possible emission of spectral lines are -

(1) First three Lyman lines, first two Balmer lines and first Paschen line
(2) First three Lyman lines only
(3) First two Balmer lines only
(4) none of the above

34. Atomic weight of boron is 10.81 and it has two isotopes $_5B^{10}$ and $_5B^{11}$. Then ratio of $_5B^{10}$: $_5B^{11}$ in nature would be

(1) 19 : 81
(2) 10 : 11
(3) 15 : 16
(4) 81 : 19

35. Which one of the following curve may represent the speed of electron in a hydrogen atom as a function of principal quantum number :
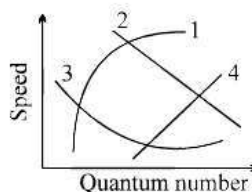
(1) 3
(2) 2
(3) 1
(4) 4

Physics - Section B

Section B Shall Consist Of 15 (Fifteen) Questions In Each Subject. Candidate Needs To Attempt Any 10 (Ten) Questions Out Of 15 (Fifteen) In Each Subject.

36. A frictionless wire AB is fixed on a sphere of radius R. A very small spherical ball slips on this wire. The time taken by this ball to slip from A to B is :-
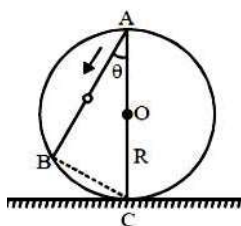
(1) $\dfrac{2\sqrt{gR}}{g\cos\theta}$

(2) $2\sqrt{gR}\dfrac{\cos\theta}{g}$

(3) $2\sqrt{\dfrac{R}{g}}$

(4) $\dfrac{gR}{\sqrt{g\cos\theta}}$

37. The orbital velocity of an artificial satellite in a circular orbit just above earth's surface is v_0. The orbital velocity for a satellite orbiting in a circular orbit at an altitude of half of earth's radius is

(1) $\sqrt{\dfrac{3}{2}}v_0$
(2) $\sqrt{\dfrac{2}{3}}v_0$
(3) $\dfrac{3}{2}v_0$
(4) $\dfrac{2}{3}v_0$

38. The electric field near a conducting surface having a uniform surface charge density σ is given by :-

(1) $\dfrac{\sigma}{\epsilon_0}$ and is parallel to the surface
(2) $\dfrac{2\sigma}{\epsilon_0}$ and is parallel to the surface
(3) $\dfrac{\sigma}{\epsilon_0}$ and is normal to the surface
(4) $\dfrac{2\sigma}{\epsilon_0}$ and is normal to the surface

39. In electromagnetic induction, the induced charge in a coil is independent of

(1) Change in the flux
(2) Time
(3) Resistance in the circuit
(4) None of the above

40. The emf of a cell is balanced at 52 cm length of the potentiometer wire. If 5 ohm resistance is inserted from the resistance box connected with the cell, then balancing length obtained is 40 cm. The internal resistance of the cell will be:

(1) 1.5 ohm (2) 2.0 ohm (3) 1.8 ohm (4) 3.0 ohm

41. In electromagnetic induction, the induced e. m. f. in a coil is independent of

(1) Change in the flux   (2) Time

(3) Resistance of the circuit   (4) None of the above

42. A diamagnetic material in a magnetic field moves:

(1) From weaker to the stronger field

(2) Perpendicular to the field

(3) From stronger to the weaker field

(4) In none of the above directions

43. Power delivered by the ac source of the circuit becomes maximum when :

(1) $\omega L = \omega C$ (2) $\omega L = \frac{1}{\omega C}$

(3) $\omega L = -\left(\frac{1}{\omega C}\right)^2$ (4) $\omega L = \sqrt{\omega C}$

44. An ac generator produced an out put voltage E = 170 sin 377 t volt, where t is in seconds, the frequency of a.c. voltage is :-

(1) 50 Hz   (2) 110 Hz

(3) 60 Hz   (4) 230 Hz

45. When transistors are used in digital circuits they usually operate in the:

(1) active region

(2) breakdown region

(3) saturation and cutoff regions

(4) linear region

46. For D_1 forward bias resistance is 20 Ohm and reverse bias resistance is 600 Ohm. For D_2 forward bias resistance is 30 Ohm and reverse bias resistance is 200 Ohm. Find the equivalent resistance between A and B if (i) A is at a higher potential (ii) B is at a higher potential
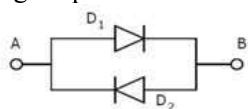
(1) $\frac{200}{7}\Omega$ and $\frac{200}{11}\Omega$

(2) $\frac{200}{11}\Omega$ and $\frac{200}{7}\Omega$

(3) 50 Ω and 800 Ω

(4) 220 Ω and 630 Ω

47. The fig. shows two NAND gates followed by a NOR gate. The system is equivalent to the following logic gate
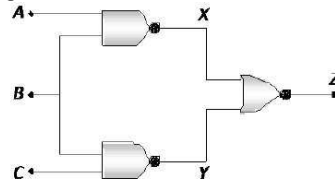
(1) OR   (2) AND

(3) NAND   (4) None of these

48. In a common-base configuration of transistor, α = 0.98, I_B = 0.02mA, R_L = 5 kΩ. Output voltage across load is
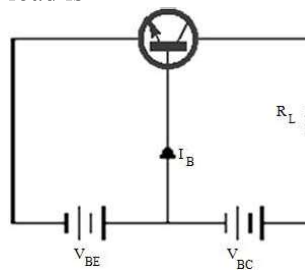
(1) 3.2 V   (2) 4.9 V

(3) 5.2 V   (4) 6.2 V

49. One mole of ideal monoatomic gas $(\gamma = 5/30)$ is mixed with one mole of diatomic gas $(\gamma = 7/5)$. What is γ for the mixture ? γ denotes the ratio of specific heat at constant pressure, to that at constant volume :-

(1) $3/2$ (2) $23/15$

(3) $35/23$ (4) $4/3$

50. The temperature inside a refrigerator is $t_2°C$ and the room temperature is $t_1°C$. The amount of heat delivered to the room for each joule of electrical energy consumed ideally will be:

(1) $\frac{t_2+273}{t_1-t_2}$ (2) $\frac{t_2+t_2}{t_1+273}$

(3) $\frac{t_1}{t_1-t_2}$ (4) $\frac{t_1+273}{t_1-t_2}$

51. Correct order of rates of alkaline hydrolysis $\left(B_{Ac^2}\right)$ of compounds I to IV is -

(1) O_2N—⬡—$COOCH_3$

(2) CH_3O—⬡—$COOCH_3$

(3) ⬡—$COOCH_3$

(4) Cl—⬡—$COOCH_3$
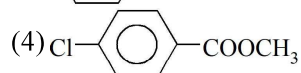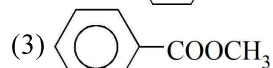
(1) $1 > 4 > 3 > 2$ (2) $1 > 3 > 4 > 2$

(3) $2 > 3 > 4 > 1$ (4) $2 > 4 > 3 > 1$

52. For an ideal solution of two components A and B, which of the following is true ?

(1) $\Delta_{mix} H < 0$

(2) $\Delta_{mix} V < 0$

(3) A-----B interactions is stronger than A----A and B----B interactions

(4) A----A, A----B and B----B interactions are identical

53. The element with $Z = 120$ (not yet discovered) will be an/a -

(1) alkali metal   (2) alkaline earth metal

(3) transition metal   (4) inner-transition metal

54. In which case van't Hoff factor is maximum ?

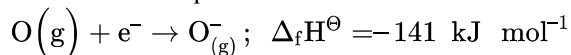(1) KCl, 50% ionized   (2) K_2SO_4, 40% ionized

(3) $FeCl_3$, 30% ionized   (4) $SnCl_4$, 20% ionized

55. Hyperconjugation involves overlap of the following orbitals -

(1) σ-σ (2) σ-p

(3) p-p   (4) π-π

56. The formation of the oxide ion, $O^{2-}(g)$, from oxygen atom requires first an exothermic and then an endothermic step as shown below :

$O\left(g\right) + e^- \rightarrow O^-_{(g)}$; $\Delta_f H^\Theta = -141$ kJ mol^{-1}

$O^-\left(g\right) + e^- \rightarrow O^{2-}_{(g)}$; $\Delta_f H^\Theta = +780$ kJ mol^{-1}
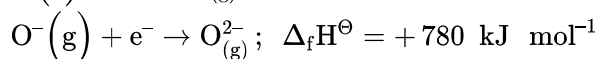
Thus process of formation of O^{2-} in gas phase is unfavourable even thought O^{2-} is isoelectronic with neon. It is due to the fact that -

(1) Oxygen is more electronegative

(2) Addition of electron in oxygen results in larger size of the ion

(3) Electron repulsion outweighs the stability gained by achieving noble gas configuration

(4) O^- ion has comparatively smaller size than oxygen atom

57. The solubility of AgCl(s) with solubility product 1.6×10^{-10} in 0.1 M NaCl solution would be -

(1) 1.6×10^{-11} M

(2) Zero

(3) 1.26×10^{-5} M

(4) 1.6×10^{-9} M

58. With respect to the conformers of ethane, which of the following statements is true ?

(1) Bond angle remains same but bond length changes.

(2) Bond angle changes but bond length remains same.

(3) Both bond angle and bond length change

(4) Both bond angles and bond length remains same.

59. How many P–OH bond in pyrophosphoric acid ?
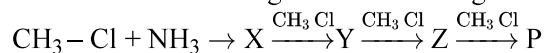
(1) 2   (2) 3   (3) 4   (4) 5

60. During the electrolysis of molten sodium chloride, the time required to produce 0.10 mole of chlorine gas using a current of 3 amperes is -

(1) 330 minutes   (2) 55 minutes

(3) 110 minutes   (4) 220 minutes

61. Which of the following is least basic in gaseous state?

$$CH_3 - Cl + NH_3 \rightarrow X \xrightarrow{CH_3 Cl} Y \xrightarrow{CH_3 Cl} Z \xrightarrow{CH_3 Cl} P$$

(1) X
(2) Y
(3) Z
(4) All are equally basic

62. Which of the following is an example of a planar molecule having a net dipole moment?

(1) NF_3
(2) ClF_3
(3) XeO_3
(4) SO_3

63. In a first order reaction the reacting substance has half-life period of ten minutes. What fraction of the substance will be left after an hour the reaction has occurred ?

(1) 1/6 of initial concentration
(2) 1/64 of initial concentration
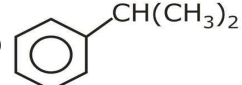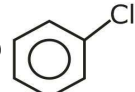(3) 1/12 of initial concentration
(4) 1/32 of initial concentration
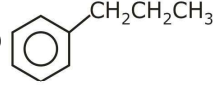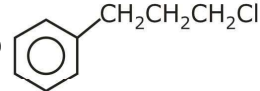
64. Arenediazonium salts are formed by the reaction of

(1) an aromatic amine with hydrogen and palladium
(2) an aromatic amine sodium dichromate
(3) an aromatic amine with nitrous acid
(4) an aromatic amine with potassium nitrosodisulfonate

65. AgCl and NaCl are colourless NaBr & NaI are also colourless but AgBr and AgI are coloured. This is due to -
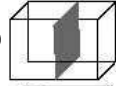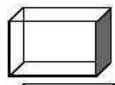
(1) Ag^+ has half filled d−orbital
(2) Ag^+ polarises Br^- & I^-
(3) Ag^+ depolarises Br^- & I^-
(4) None is correct

66.

 + $CH_3CH_2CH_2Cl \xrightarrow{AlCl_3}$?

(1) $CH_2CH_2CH_3$

(2) $CH_2CH_2CH_2Cl$

(3) $CH(CH_3)_2$

(4) Cl

67. Which of the following shaded plane in fcc lattice contains arrangement of atoms as shown by circles ?
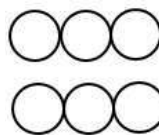
(1)
(2)
(3)
(4)

68. The difference in the number of unpaired electrons of a metal ion in its high-spin and low-spin octahedral complexes is two. The metal ion is-

(1) Mn^{2+}
(2) Fe^{2+}
(3) Co^{2+}
(4) Ni^{2+}

69. Which one of the following is correct for the adsorption of a gas at a given temperature on a solid surface ?

(1) $\Delta H < 0, \Delta S > 0$
(2) $\Delta H > 0, \Delta S < 0$
(3) $\Delta H < 0, \Delta S < 0$
(4) $\Delta H > 0, \Delta S > 0$

70. Amylopectin is composed of -

(1) α-D-glucose, $C_1 - C_4$ and $C_1 - C_6$ Linkages
(2) α-D-glucose, $C_1 - C_4$ and $C_2 - C_6$ linkages
(3) β-D-glucose, $C_1 - C_4$ and $C_2 - C_6$ linkages
(4) β-D- glucose, $C_1 - C_4$ and $C_1 - C_6$ linkages

71. The one that is not suitable for the removal of permanent hardness of water is-

(1) Ion-exchange method

(2) Calgon's method

(3) Treatment with sodium carbonate

(4) Clark's method

72.
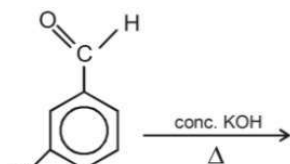
Product of above reaction is –
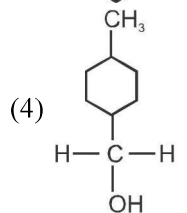
(1)

(2)

(3)

(4)

73. The capacity of an ion to coagulate a colloidal solution depends on-

(1) Its shape

(2) The magnitude of its charge

(3) The sign of the charge

(4) Both, the magnitude and the sign of the charge

74. The metal that forms nitride by reacting directly with N_2 of air is -

(1) Cs   (2) K

(3) Li   (4) Rb

75.

(1)

(2)

(3)

(4)
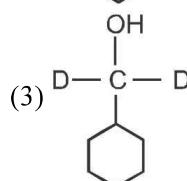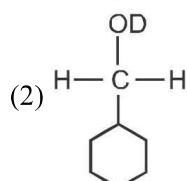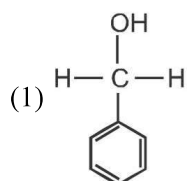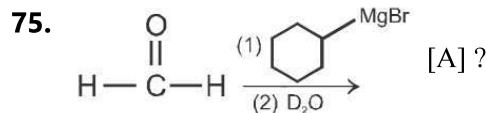
76. How many moles of P_4 can be produced by reaction of 0.10 moles $Ca_5(PO_4)_3F$, 0.36 moles SiO_2 and 0.90 moles C according to the following reaction ?
$4Ca_5(PO_4)_3F + 18SiO_2 + 30C \rightarrow 3P_4 + 2CaF_2 + 18CaSiO_3 + 30CO$
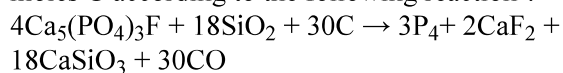
(1) 0.060   (2) 0.030

(3) 0.045   (4) 0.075

77. Which of the following is the **incorrect** reason for anomalous behaviour of lithium?

(1) Exceptionally small size of its atom

(2) High polarising power of its ion

(3) High degree of hydration of its ion

(4) Exceptionally low ionisation enthalpy

78. Consider the following reaction :

Which respond contains the correct statements about this process are?
(I) Dehydration
(II) E2 mechanism
(III) Carbon skeleton migration
(IV) Most stable carbocation forms after rearrangement

(1) I, III (2) I, II, III
(3) I, II, V (4) I, III, IV

79. The atomic number of an element is 17. The number of orbitals containing electron pairs in its valence shell is-

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

80. Aluminium is usually found in +3 oxidation state. In contrast, thallium exists in +1 and +3 oxidation states. This is due to -

(1) Diagonal relationship (2) Inert pair effect
(3) Lattice effect (4) Lanthanoid contraction

81. 50 mL of each gas A and gas B takes 150 and 200 seconds respectively for effusing through a pin hole under the similar conditions. If molecular mass of gas B is 36, the molecular mass of gas A will be ?

(1) 20.25 (2) 64
(3) 96 (4) 128

82. In the oxyacids of chlorine Cl–O bond contains –

(1) $d\pi$-$d\pi$ bonding (2) $p\pi$-$d\pi$ bonding
(3) $p\pi$-$p\pi$ bonding (4) None

83. Which one of the following conditions will favour maximum formation of the product in the reaction?
$A_2(g) + B_2(g) \rightleftharpoons X_2(g)$; $\Delta H = -X$ kJ

(1) High temperature and high pressure
(2) Low temperature and low pressure
(3) Low temperature and high pressure
(4) High temperature and low pressure

84. The reaction which represents heat of formation of water is -

(1) $H_2(g) + \frac{1}{2}O_2(g) \rightarrow H_2O(\ell)$; $\Delta H = -68.3$ K.cal. mol^{-1}
(2) $2H_2(g) + O_2(g) \rightarrow 2H_2O(\ell)$; $\Delta H = -136.6$ K.cal. mol^{-1}
(3) $H_2(\ell) + \frac{1}{2}O_2(g) \rightarrow H_2O(\ell)$; $\Delta H = -86.3$ K.cal. mol^{-1}
(4) $H_2(g) + \frac{1}{2}O_2(\ell) \rightarrow H_2O(\ell)$; $\Delta H = +68.3$ K.cal. mol^{-1}

85. The equivalent weight of $MnSO_4$ is half its molecular weight when it is converted to –

(1) Mn_2O_3 (2) MnO_2
(3) MnO_4^- (4) MnO_4^{2-}

Chemistry - Section B
Section B Shall Consist Of 15 (Fifteen) Questions In Each Subject. Candidate Needs To Attempt Any 10 (Ten) Questions Out Of 15 (Fifteen) In Each Subject.

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86. Arrange in decreasing order of reactivity with electrophilic addition reaction from -
(I) $Ph_2C=CH_2$
(II) $Ph–CH=CHPh$
(III) $Ph–CH=CHMe$

(1) I > III > II (2) III > II > I
(3) I > II > III (4) I = II > III

87. In a set of reactions propionic acid yielded a compound (D);

CH_3CH_2COOH (A) $\xrightarrow{SOCl_2}$ (B) $\xrightarrow{NH_3}$ (C) $\xrightarrow[Br_2]{KOH}$ (D)

What is the structure of (D) ?

(1) $CH_3CH_2CH_2NH_2$ (2) $CH_3CH_2CONH_2$
(3) $CH_3CH_2NHCH_3$ (4) $CH_3CH_2NH_2$

88. Co-ordinate bond is present in -

(1) H_2O (2) NH_3

(3) CH_3NO_2 (4) CCl_4

89. In a given shell the order of screening effect is -

(1) s > p > d > f   (2) f > d > p > s

(3) p < d < s < f   (4) d > f > s > p

90. Bond angle in H_2O is 104.5°, then bond in Cl_2O should be -

(1) 104.5°   (2) 101°

(3) 109°28'   (4) 110.8°

91. The vapour pressure of pure benzene at 88°C is 960 mm and that of toluene at the same temperature is 380 mm. At what mole-fraction of benzene, the mixture will boil at 88°C ?

(1) 0.355   (2) 0.288

(3) 0.859   (4) 0.655

92. Which of the following species is not stable?

(1) $[Sn(OH)_6]^{2-}$ (2) $[SiCl_6]^{2-}$

(3) $[SiF_6]^{2-}$ (4) $[GeCl_6]^{2-}$

93. A solution has pH = 5, it is diluted 100 times, then it will become -

(1) neutral   (2) basic

(3) unaffected   (4) more acidic

94. 500 mL of an aqueous solution contains 0.1 mole of the solute AB, if its specific conductance is X S cm^{-1}, its molar conductance will be .... S cm^2 mol^{-1}-

(1) 10x   (2) 5000x

(3) x   (4) 200x

95. The rate constant of a first order reaction is 10^{-3} min^{-1} at 300 K. The temperature coefficient of the reaction is 2. What is the rate constant of the reaction if temprature becomes 350 K ?

(1) 16×10^{-3} (2) 64×10^{-3}

(3) 32×10^{-3} (4) 2^{50}

96. A crystal is made of particle X, Y & Z. X forms fcc packing, Y occupies all octahedral voids of X and Z occupies all tetrahedral voids of X, if all the particles along one body diagonal are removed then the formula of the crystal would be-

(1) XYZ_2 (2) X_2YZ_2

(3) $X_8Y_4Z_5$ (4) $X_5Y_4Z_8$

97. The potential energies of first, second and third Bohr's orbits of He$^+$ cation are E_1, E_2 and E_3. The correct sequence of these energies is -

(1) $E_1 > E_2 > E_3$

(2) $E_1 = E_2 > E_3$

(3) $E_1 = E_2 = E_3$

(4) $E_3 > E_2 > E_1$

98. The equilibrium constant K_p for the reaction $PCl_5 \rightleftharpoons PCl_3 + Cl_2$ is 1.6 at 200°C. Find out the total pressure if PCl_5 will be 50% dissociated at 200°C is-

(1) 3.2 atm   (2) 4.8 atm

(3) 2.4 atm   (4) 6.4 atm

99. When one mole of an ideal gas is compressed to half of its initial volume and simultaneously heated to twice its initial temperature, the change in entropy of gas (ΔS) is-

(1) $C_p \ln 2$ (2) $C_v \ln 2$

(3) $R \ln 2$ (4) $(C_v - R) \ln 2$

100. Which of the following reactions are disproportionation reaction ?

(a) $2\,Cu^+ \rightarrow Cu^{2+} + Cu^0$

(b) $2\,KMnO_4 \xrightarrow{\Delta} K_2MnO_4 + MnO_2 + O_2$

(c) $3\,MnO_4^{2-} + 4H^+ \rightarrow 2\,MnO_4^- + MnO_2 + 2H_2O$

(d) $2\,MnO_4^- + 3Mn^{2+} + 2H_2O \rightarrow 5MnO_2 + 4H^+$

Select the correct option from the following-

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

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

Botany - Section A
Section A Shall Consist Of 35 (Thirty-five) Questions In Each Subject .All Questions Are Compulsory.

101. The taxonomic unit 'Phylum' in the classification of animals is equivalent to which hierarchial level in classification of plants?

(1) Class (2) Order

(3) Division (4) Family

102. To initiate cell plasmolysis, the solution concentration must be :-

(1) Isotonic (2) Hypotonic

(3) Hypertonic (4) Atonic

103. In China rose the flowers are

(1) actinomorphic, hypogynous with twisted aestivation

(2) actinomorphic, epigynous with valvate aestivation

(3) zygomorphic, hypogynous with valvate aestivation

(4) zygomorphic, epigynous with twisted aestivation

104. Read the following statements (a-d) :
(a) Autosomal recessive trait can't be
transmitted from normal parents to the offspring
(b) The heterozygous male for haemophilic
may transmit the disease to sons
(c) Dominance is not an autonomous feature of
gene or gene produce.
(d) Dominance is not universal in general characters
Find which are only correct statements ?

(1) a & d (2) c & d

(3) a, b, & d (4) All are correct

105. Largest herbaria of the Asia is at–

(1) Kew (2) Sibpur (3) Chennai (4) Trombay

106. According to Munch theory, the cause of flow of soluble substances is

(1) Protoplasmic flow

(2) Mass flow due to reduction in turgor pressure

(3) Diffusion

(4) None of these

107. Which modification of root does not store food -

(1) Napiform root (2) Fusiform root

(3) Conical root (4) Stilt root

108. In Mirabilis plant tallness is dominant over dwarfness while red flowers are incompletely dominant over white flowers. A pure tall & red flowered plant is crossed with dwarf & white flowered plant. What will be the percentage probability of getting pink, white and red flowered plants in F_2 generation ?

(1) 25%, 50%, 25% (2) 50%, 25%, 25%

(3) 75%, 0%, 25% (4) 50%, 0%, 50%

109. An organism lacking chlorophyll but able to carry on photosynthesis of organic matter has been found among which one of the following:-

(1) Bacteria (2) Fungi

(3) Viruses (4) Bacteriophages

110. Which of the following is not a product of light reaction of photosynthesis ?

(1) ATP (2) NADH (3) NADPH (4) Oxygen

111. Which of followings is correctly match?

(1) Parietal placentation – Primrose

(2) Axile placentation – Mustard

(3) Basal placentation – Sunflower

(4) Free central placentation – Lemon

112. The linkage map of X-chromosome of fruitfly has 66 units, with yellow body gene (y) at one end and bobbed hair (b) gene at the other end. The recombination frequency between these two genes (y and b) should be :

(1) 60% (2) > 50%

(3) ≤ 50% (4) 100%

113. Which phage shows generalised transduction:-

(1) T_2 phase (2) Prophage

(3) Lysogenic phage (4) All the above

114. A plant in your garden avoids photorespiratory losses, has improved water use efficiency, shows high rates of photosynthesis at high temperatures and has improved efficiency of nitrogen utilisation. In which of the following physiological groups would you assign this plant?
    (1) C_3
    (2) C_4
    (3) CAM
    (4) Nitrogen fixer

115. Pith is less developed in :-
    (1) Dicot stem
    (2) Dicot root
    (3) Monocot stem and monocot root
    (4) Monocot root

116. Which of the following statements are true with regards to DNA replication in E.coli -
    (a) It complete within 18 minute
    (b) DNA polymerase catalyze the polymerization very rapidly
    (c) DNA polymerase catalyze the reaction with high degree of accuracy
    (d) Energetically replication is not a expensive process
    (1) b, c & d
    (2) a, c & d
    (3) a, b, c
    (4) All four

117. Keiselgurh, a heat resistant material, is obtained from :
    (1) Rhodophyta
    (2) Phaeophyta
    (3) Diatoms.
    (4) Pyrrophyta

118. The product(s) of reaction catalyzed by nitrogenase in root nodules of leguminous plant is/are:
    (1) Ammonia and oxygen
    (2) Ammonia and hygrogen
    (3) Ammonia alone
    (4) Nitrate alone

119. Name the enzyme that facilitates opening of DNA helix during transcription.
    (1) DNA polymerase
    (2) RNA polymerase
    (3) DNA ligase
    (4) DNA helicase

120. The first seeded plants are the
    (1) Bryophytes
    (2) Gymnosperms
    (3) Algae
    (4) Pteridophytes

121. Which of the metabolites is common to respiration mediated breakdown of fats, carbohydrates and proteins ?
    (1) Acetyl CoA
    (2) Glucose-6-phosphate
    (3) Fructose 1, 6-biphosphate
    (4) PGAL

122. The term informosome is applied to :-
    (1) t−RNA protein complex
    (2) m−RNA protein complex
    (3) m−RNA + t − RNA complex
    (4) r − RNA + t − RNA complex

123. The plant part which is used to culture is called-
    (1) Explant
    (2) Endplant
    (3) Transplant
    (4) Callus

124. The number of substrate level phosphorylations in one turn of citric acid cycle is :
    (1) Two
    (2) Three
    (3) Zero
    (4) One

125. The main aim of plant breeding is :-
    (1) To produce improved varieties
    (2) To make soil fertile
    (3) To control pollution
    (4) To become more progressive

126. If a leaf cell of Agave has x chromosomes then what will be the number of chromosomes in a cell of its bulbil ?
    (1) 2x
    (2) x/2
    (3) x/4
    (4) x

127. The Phenomenon of bolting effect and Richmond lang effect are respectively due to:-
    (1) Auxin and Gibberellin
    (2) Gibberellin and cytokinin
    (3) Cytokinin and Abscisic acid
    (4) Abscisic acid and Ethylene

128. A population of organisms genetically similar obtained from the same individual by vegetative propagation is known as

(1) Offspring   (2) Clone

(3) Stocks   (4) Scions

129. Gause's principle of competitive exclusion states that :

(1) Competition for the same resources excludes species having different food preferences.
(2) No two species can occupy the same niche indefinitely for the same limiting resources.
(3) Larger organisms exclude smaller ones through competition.
(4) More abundant species will exclude the less abundant species through competition.

130. In a growing population of a country

(1) reproductive and pre-reproductive individuals are equal in number
(2) reproductive individuals are less than the post-reproductive individuals
(3) pre-reproductive individuals are more than the reproductive individuals
(4) pre-reproductive, individuals are less than the reproductive individuals

131. What type of ecological pyramid would obtained with the following data ?
Secondary consumer : 120 g
Primary consumer : 60 g
Primary producer : 10 g

(1) Inverted pyramid of biomass
(2) Pyramid of energy
(3) Upright pyramid of numbers
(4) Upright pyramid of biomass

132. Which one of the following is a characteristic feature of cropland ecosystem ?

(1) Absence of soil organisms   (2) Least genetic diversity
(3) Absence of weeds   (4) Ecological succession

133. Which of the following is the most important cause of animals and plants being driven to extinction ?

(1) Over-exploitation
(2) Alien species invasion
(3) Habitat loss and fragmentation
(4) Co - extinctions

134. DDT is

(1) Green House Gas   (2) Degradable pollutant
(3) Non degradable pollutant   (4) None of the above

135. Given figure represents biomagnification of DDT in an aquatic food chain. Select the incorrect statement regarding this :
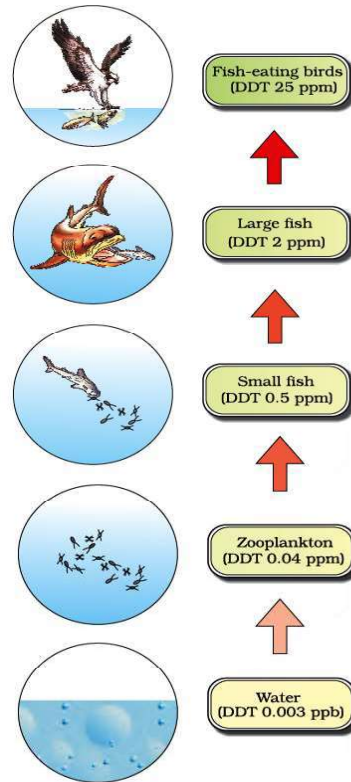
(1) When agricultural fields are sprayed with DDT, it carried by runoff water into nearby aquatic bodies.
(2) River water may have a very low concentration of DDT, but the carnivorous fish in that river may contain high concentration of DDT, which is still suitable for consumption by human beings
(3) Increased concentration of DDT in birds affects calcium metabolism due to which egg shells become thin and break before maturity
(4) All of these

136. Meristematic tissues responsible for increasing the girth of tree trunk is

(1) Apical meristem　　(2) Intercalary meristem

(3) Lateral meristem　　(4) All of the above

137. The arrangement of vascular bundles in the roots of monocots is

(1) Conjoint open　　(2) Conjoint closed

(3) Radial　　(4) Bicollateral

138. Sickle cell anemia is an example of :
(i) Mendelian disorder
(ii) Genetic disorder
(iii) Chromosomal disorder
(iv) Absolute lethality
(v) Point mutation
(vi) Frame–Shift mutation
(vii) Sex-linked disease
(viii) Recessive disorder
(ix) Qualitative disorder
(x) Quantitative disorder
(xi) Autosomal disorder

(1) i, ii, iv, v, viii, x, xi　　(2) i, vi, viii, ix, xi

(3) i, ii, v, viii, ix, xi　　(4) ii, iii, v, vii, ix

139. Two plants of genotype RrTt (R-sweet fruit, T-height) are crossed with each other. The probability of it's offspring to carry only one dominant character is-

(1) $\frac{9}{16}$　　(2) $\frac{3}{4}$

(3) $\frac{1}{16}$　　(4) $\frac{6}{16}$

140. Stored food in fungi-

(1) Starch　　(2) Protein　　(3) Glycogen　(4) Chytin

141. Usually triplet codons are read in which direction :-

(1) $3' - 5'$　(2) $5' - 3'$　(3) $5' - 5'$　(4) $3' - 3'$

142. Mycorrhiza is an example of :-

(1) Symbiotic relationship　(2) Ectoparasitism

(3) Endoparasitism　　(4) Decomposers

143. Match the component of 'lac operon' of E.coli given under column-I with their function listed in column-II. Choose the answer with correct combination of alphabet of the two columns-

	Column -I (Component of lac Operon)		Column II - (Function of lac Operon)
(A)	Structural gene	(i)	Binding site for repressor protein
(B)	Operator gene	(ii)	Codes for repressor protein
(C)	Promoter gene	(iii)	Induces lactose transport from the medium
(D)	Regulator gene	(iv)	Codes for enzyme
		(v)	Binding site for RNA-polymerase

(1) A - i, B - iv, C - ii, D - iii

(2) A - iv, B - ii, C - i, D - iii

(3) A - iv, B - i, C - v, D - ii

(4) A - ii, B - iii, C - v, D - i

144. Highest unit of classification :

(1) Phylum　　(2) Kingdom

(3) Class　　(4) Species

145. Oxygen is not produced during photosynthesis by:

(1) Green sulphur bacteria　(2) Nostoc

(3) Cycas　　(4) Chara

146. The essential element for plants are elements which are -

(1) Directly involved in metabolism

(2) Necessary for growth and reproduction

(3) Posses specific role in plant life

(4) All the above

147. The net gain of ATP molecules in glycolysis during aerobic respiration is

(1) 0　　(2) 2

(3) 4　　(4) 8

148. Which of the following is correct for r-selected species?

(1) Small number of progeny with large size

(2) Large number of progeny with small size

(3) Large number of progeny with large size

(4) Small number of progeny with small size

149. Some of the stages in the hydrach are labelled as :-

(a) Marsh meadow stage

(b) Reed swamp stage

(c) Submerged plant stage

(d) Phytoplankton stage

(e) Rooted floating stage

Identify the choice that represent the correct sequence of these stages :-

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

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

150. Which of the following regions of the globe exhibits highest species diversity?

(1) Himalayas   (2) Amazon forests

(3) Western Ghats of India (4) Madagascar

Zoology -Section A
Section A Shall Consist Of 35 (Thirty-five) Questions In Each Subject .All Questions Are Compulsory.

151. Select the correct statements regarding the characteristics of acquired immunity-

(a) Cell- mediated immunity is responsible for rejection of Graft.

(b) Primary immune response is slow and of low intensity

(c) Active and passive immunity are types of acquired immunity.

(d) Polymorphonuclear leucocytes and natural killer cells are involved in acquired immunity.

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

(3) (a) and (d)   (4) (a) and (c)

152. Which ones are the most essential for origin of life

(1) Enzymes   (2) Proteins

(3) Carbohydrates   (4) Nucleic acid

153. Which of the following statements is correct in relation to the endocrine system?

(1) Releasing and Inhibitory hormones are produced by the pituitary gland

(2) Adenohypophysis is under direct neural regulation of the hypothalamus

(3) Organs in the body like gastrointestinal tract, heart, kidney and liver do not produce hormones

(4) Non–nutrient chemicals produced by the body in trace amount that act as intercellular messenger are known as hormones

154. Select the incorrect statements

(1) Natural selection is a heritable variation & by reproduction leave greater number of progeny

(2) During stabilisation of natural selection more individuals acquire value other than mean character value

(3) By the time of 500 million years ago invertebrates were formed and were active

(4) Reptiles lay thick shelled eggs which do not dry up in sun unlike those of Amphibians

155. The basal metabolic rate (BMR) in body cells is regulated by:-

(1) Parathyroid gland   (2) Thymus gland

(3) Pituitary gland   (4) Thyroid gland

156. Prehistoric cave art developed about-

(1) 10000 years ago   (2) 15000 years ago

(3) 18000 years ago   (4) 20000 years ago

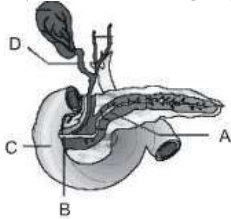**157.** Which one is the most widely accepted method of contraception presently in India?

(1) Diaphragm   (2) Cervical caps

(3) IUDs   (4) Tubectomy

158. Mule is a product of

(1) Mutation

(2) Inbreeding

(3) Cross-breeding

(4) Interspecific hybridisation

159. Study the following figure ?

The correct one about 'A', 'B', 'C' and 'D' is :

(1) 'A' is bile duct while 'C' is ileum

(2) 'B' is bile duct while 'C' is ielum

(3) 'D' is cystic duct while 'A' is pancreatic duct

(4) 'B' is hepatopancreatic duct while 'D' is bile duct

160. Find out the **correct** statements -

(a) Cell differentation occur in blastocyst stage.

(b) Three germinal layers are formed during gastrullation.

(c) At the time of implantation embryo is in Blastulla stage.

(d) The first evidence of gastrulation is the formation of the "primitive streak".

(e) The trophoblast layer contains certain cells called stem cells which have the potency to give rise to all the tissue and organs.

Option :

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

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

161. Regulation of kidney function by Juxtaglomerular Apparatus (**JGA**) involves certain steps given below. Arrange them in the **correct** order:

(a) Release of enzyme renin

(b) Release of aldosterone from adrenal gland

(c) Reabsorption of Na^+ and water at DCT

(d) Decrease in blood pressure and blood volume

(e) Conversion of angiotensinogen to angiotensin II

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

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

162. In which organ bile juice produced?

(1) Liver   (2) Stomach

(3) Pancreas   (4) Duodenum

163. Which part of poppy plant is used to obtain the drug "Smack" ?

(1) Flowers   (2) Latex

(3) Roots   (4) Leaves

164. Serum differs from blood in

(1) lacking antibodies   (2) lacking globulins

(3) lacking albumins   (4) lacking clotting factors

165. Select the favourable conditions required for the formation of oxyhaemoglobin at the alveoli.

(1) Low pO_2, low pCO_2, more H^+, higher temperature

(2) High pO_2, low pCO_2, less H^+, lower temperature

(3) Low pO_2, high pCO_2, more H^+, higher temperature

(4) High pO_2, high pCO_2, less H^+, higher temperature

166. In mammals the opening of post canal in the right auricle is guarded by

(1) Mitral valve   (2) Thebasian valve

(3) Eustachian valve   (4) Tricuspid valve

167. What will be the value of P_{O2} and P_{CO2} in the atmospheric air compared to those in the alveolar air ?

(1) P_{O2} lesser, P_{CO2} higher

(2) P_{O2} higher, P_{CO2} lesser

(3) P_{O2} higher, P_{CO2} higher

(4) P_{O2} lesser, P_{CO2} lesser

168. Receptor sites for neurotransmitters are present on-

(1) pre-synaptic membrane

(2) tips of axons

(3) post-synaptic membrane

(4) membranes of synaptic vesicles

169. Which of the following animals (s) is/are anamniota with external fertilization ?

A.

B.

C.

D.
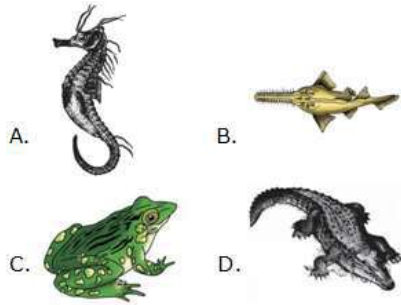
Option :

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

170. Good vision depends on adequate intake of carotene rich food : Select the best option from the following statements
(a) Vitamin A derivatives are formed from carotene
(b) The photopigments are embeded in the membrane discs of the inner segment
(c) Retinal is a derivative of Vitamin A
(d) Retinal is a light absorbing part of all the visual photopigments

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

171. Which of the following is not related to external genitalia of female (vulva)-

(1) Mons pubis
(2) Clitoris
(3) Labia minora
(4) vagina

172. De Vries gave his mutation theory on organic evolution while working on –

(2) Drosophila
(1) Oenothera lamarckiana melanogaster
(3) Pisum sativum
(4) Althea rosea

173. Match the following columns :

	Column-I (Products)		Column-II (produced by)
A	Statins	i	Streptococcus
B	Streptokinase	ii	Trichoderma polysporum
C	Cyclosporin	iii	Saccharomyces cerevisiae
D	Ethanol	iv	Monascus purpureus

(1) A- iv, B- iii , C- ii, D - i
(2) A- iv, B- i , C- ii, D - iii
(3) A- i, B- ii , C- iii, D - iv
(4) A- ii, B- iii , C- iv, D - i

174. Contraction of muscle fibres takes place by the **sliding of** :

(1) Thin fillaments over the actin filaments
(2) Thick filaments over the thin filaments
(3) Thin filaments over the thick filaments
(4) Thick filaments over the myosin filaments

175. Which of the following structures are situated in the cortical region of the kidney?
(I) Malpighian corpuscle
(II) PCT (Proximal Convoluted Tubules)
(III) DCT (Distal Convoluted Tubules)
(IV) Loop of Henle
(V) Collecting duct

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

176. For a DNA to function as a cloning vector the most essential requirement is :-

(1) Multiple restriction sites
(2) Several selectable markers
(3) Circular nature
(4) 'ori' sequence

177. What must be done before placing DNA into the electrophoretic chamber

(1) It must be ground up with mortar and pestle
(2) It must be cut by restriction endonucleases
(3) It must be treated with RNAase
(4) None

178. Which of the following is **not** a component of downstream processing?

(1) Preservation   (2) Expression

(3) Separation   (4) Purification

179. A Nematode Meloidegyne incognitia infects the roots of tobacco plants and Causes a great reduction in yield. A novel strategy was adopted to prevent this infection which was based on the process of :

(1) Ti plasmid   (2) Poly adenylation

(3) RNA interferance   (4) Insertional inactivation

180. Which of the following is commonly used as a vector for introducing a DNA fragment in human lymphocytes?

(1) λ-phage   (2) Ti plasmid

(3) Retrovirus   (4) pBR 322

181. Why is the phospholipid molecule so appropriate as the primary structural component of plasma membrane:-

(1) Phospholipids are completely insoluble in water

(2) Phospholipid forms strong chemical bonds between the molecules joining a stable structure

(3) Phospholipid form a selectively permeable structure

(4) Phospholipid form chemical bonds with membrane protein that keep the protein within the membrane

182. What is the difference between a primary lysosome and a secondary lysosome :-

(1) Primary lysosome are longer than secondary lysosome

(2) Primary lysosome are active, while secondary lysosome are inactive

(3) Primary lysosome have a low pH, while secondary lysosome have a high pH

(4) Primary lysosome have low level of protons, while secondary lysosome have a high level of protons

183. Mitochondria and chloroplast are :-
(a) Semi-autonomous organelles
(b) Formed by division of pre-existing organelles and they contain DNA but lack protein synthesizing machinery
Which one of the following options is correct?

(1) Both (a) and (b) are correct

(2) (b) is true but (a) is false

(3) (a) is true but (b) is false

(4) Both (a) and (b) are false

184. Read the following statements about cell division and select the **correct** answer.
(i) M phase represents the phase when actual cell division occurs and I phase represents the phase between two successive M phases.
(ii) In the 24 hours average duration of cell cycle of a human cell, cell division proper lasts for only about an hour.
(iii) M phase constitutes more than 95% of the duration of cell cycle.

(1) (i) and (ii)   (2) (ii) and (iii)

(3) (i) and (iii)   (4) (i), (ii) and (iii)

185. Which of the following is not a characteristic feature during mitosis in somatic cells?

(1) Spindle fibres   (2) Disappearance of nucleolus

(3) Chromosome movement   (4) Synapsis

Zoology -Section B
Section B Shall Consist Of 15 (Fifteen) Questions In Each Subject. Candidate Needs To Attempt Any 10 (Ten) Questions Out Of 15 (Fifteen) In Each Subject.

186. Reflex is controlled by –

(1) Spinal cord

(2) ANS

(3) PNS

(4) Sympathetic nervous system

187. Which of the following is correct location and function of Meissner's plexus of intestine ?

(1) Muscularis externa – Peristalsis

(2) Muscularis interna – Peristalsis

(3) Submucosa – Mucosal secretions

(4) Mucosa – Mucosal secretions

188. In plasmodium, gametocyte stages are formed in

(1) Human liver

(2) Mosquito gut

(3) Human RBC

(4) Human salivary gland

189. Blood pressure in the pulmonary artery is:

(1) Same an that in the aorta

(2) More than that in the carotid

(3) More than that in the pulmonary vein

(4) Less than that in the venae cavae.

190. Choose the option which comprises of all oviparous animals :

(1) Neophron, Bufo, Calotes and Canis

(2) Scoliodon, Exocoetus, Neophron and Pteropus

(3) Chelone, Salamandra, Columba and Macropus

(4) Hippocampus, Chelone, Corvus and Struthio

191. Dinosaurs were abundant in—

(1) Jurassic period

(2) Devonian period

(3) Permian period

(4) Pleistocene period

192. In which of the following, internal fertilization is present –

(1) Apis, Pleurobrachia

(2) Fasciola, Ancylostoma

(3) Ascaris, Echinus

(4) Euspongia, ctenoplana

193. Which of the following contraceptive devices make uterus unsuitable for implantation ?

(1) Cervical cap

(2) Progestasert

(3) Implant

(4) Multiload-375

194. Ovulation in the human female normally takes place during the menstrual cycle

(1) At the begining of the follicular phase

(2) At the end of the follicular phase

(3) At the end of Bleeding phase

(4) Just before the end of the secretory phase

195. During micturition :

(1) Urinary bladder relaxes and urethral sphincter contracts

(2) Urinary bladder contracts and urethral sphincter contracts

(3) Urinary bladder relaxes and urethral sphincter relaxes

(4) Urinary bladder contracts and urethral sphincter relaxes

196. Which of the following is **correctly** matched ?

(1) **Sycon and Spongilla**–Spicules, external fertilisation and cellular level of body organisation

(2) **Physalia and Hydra** – Unsegmented, hypnotoxin, triploblastic and acoelomates

(3) **Ascaris and Hookworm** – Triploblastic, pseudocoelomates and dioecious

(4) **Balanoglossus and Saccoglossus** – Proboscis gland, close circulation, exclusively marine and enterocoelomates, lower chordates.

197. The stage during which separation of the paired homologous chromosomes begins is

(1) Zygotene   (2) Pachytene

(3) Diakinesis   (4) Diplotene

198. Select the incorrct match :

(1) Submetacentric Chromosomes - L-shaped chromosomes

(2) Allosomes - Sex chromosomes

(3) Lampbrush chromosomes - Diplotene bivalents

(4) Polytene chromosomes - Oocytes of amphibians

199. Which one is incorrect

(1) Each restriction endonuclease recognizes a specific palindromic nucleotide sequence.

(2) Specific base sequence is known as recognition sequence.

(3) Restriction enzymes can not cut DNA.

(4) Restriction enzymes belong to enzymes called nucleases.

200. Why is usually insulin not administered orally to a diabetic patient?

(1) Insulin is bitter in taste

(2) Insulin is a peptide.

(3) Insulin will lead to a sudden decrease in blood sugar if given orally.

(4) Insulin leads to peptic ulcer if taken orally.

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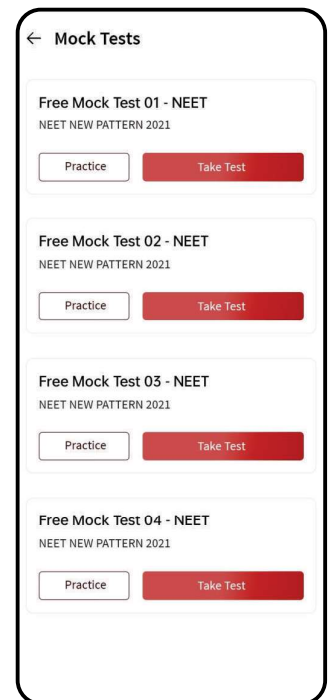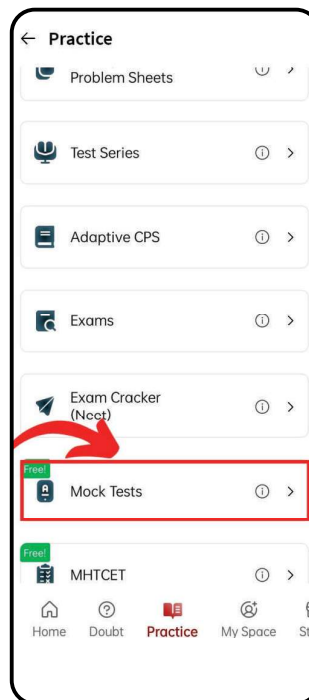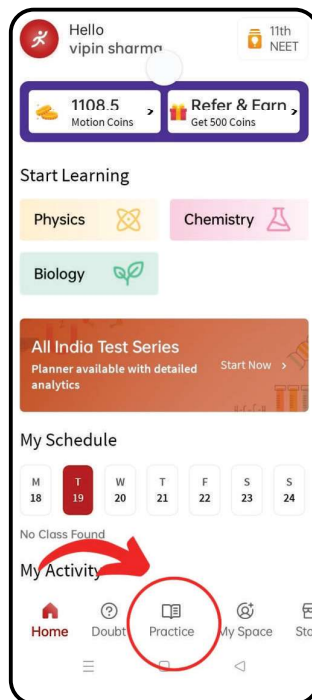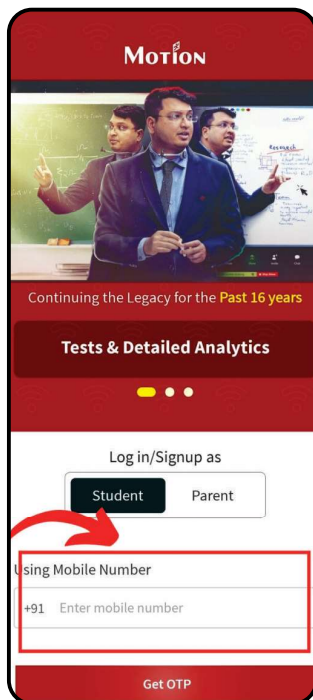## THE TEST & GET RESULTS

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