

BITSAT Solved Paper 2025 Session-I

1. A series LCR circuit consists of $R = 80\Omega$, $X_L = 100\Omega$, and $X_C = 40\Omega$. The input voltage is $2500 \cos(100\pi t)V$. The amplitude of current in the circuit is

(A) 25 A (B) 50 A (C) 75 A (D) 100 A

Correct Option: A

Solution:

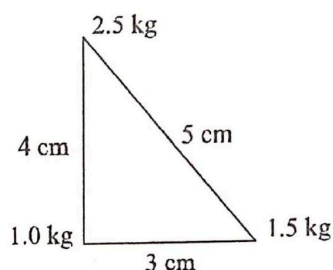
2. The potential energy of a satellite, having mass m and rotating at a height of 6.4×10^6 m from the earth surface, is

(A) $-mgR_e$ (B) $-0.67mgR_e$
(C) $-0.5mgR_\infty$ (D) $-0.33mgR_e$

Correct Option: C

Solution:

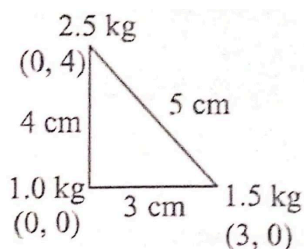
3. Three point particles of masses 1.0 kg, 1.5 kg and 2.5 kg are placed at three corners of a right-angled triangle of sides 4.0 cm, 3.0 cm and 5.0 cm as shown in the figure. The center of mass of the system is at a point:



(A) 0.6 cm right and 2.0 cm above 1 kg mass
(B) 1.5 cm right and 1.2 cm above 1 kg mass
(C) 2.0 cm right and 0.9 cm above 1 kg mass
(D) 0.9 cm right and 2.0 cm above 1 kg mass

Correct Option: D

Solution:



$$X_{cm} = \frac{m_1 x_1 + m_2 x_2 + m_3 x_3}{m_1 + m_2 + m_3}$$

$$X_{cm} = \frac{1 \times 0 + 1.5 \times 3 + 2.5 \times 0}{1 + 1.5 + 2.5} = \frac{1.5 \times 3}{5} = 0.9 \text{ cm}$$

$$Y_{cm} = \frac{m_1 y_1 + m_2 y_2 + m_3 y_3}{m_1 + m_2 + m_3}$$

$$Y_{cm} = \frac{1 \times 0 + 1.5 \times 0 + 2.5 \times 4}{1 + 1.5 + 2.5} = \frac{2.5 \times 4}{5} = 2 \text{ cm}$$

Hence, centre of mass of system is at point (0.9, 2)

4. In a Wheatstone's bridge, three resistances P , Q and R connected in the three arms and the fourth arm is formed by two resistances S_1 and S_2 connected in parallel. The condition for the bridge to be balanced will be

(A) $\frac{P}{Q} = \frac{2R}{S_1 + S_2}$
(B) $\frac{P}{Q} = \frac{R(S_1 + S_2)}{S_1 S_2}$
(C) $\frac{P}{Q} = \frac{R(S_1 + S_2)}{2S_1 S_2}$
(D) $\frac{P}{Q} = \frac{R}{S_1 + S_2}$

Correct Option: B

Solution:

5. Two cylinders A and B of equal capacity are connected to each other via a stop cock. A contains an ideal gas at standard temperature and pressure. B is completely evacuated. The entire system is thermally insulated. The stop cock is suddenly opened. The process is :

(A) adiabatic (B) isochoric
(C) isobaric (D) isothermal

Correct Option: A

Solution:

6. Polar molecules are the molecules
- (A) having a permanent electric dipole moment
(B) having zero dipole moment
(C) acquire a dipole moment only in the presence of electric field due to displacement of charges
(D) acquire a dipole moment only when magnetic field is absent

Correct Option: A

Solution:

7. A particle moves under the effect of a force $F = Cx$ from $x = 0$ to $x = x_1$. The work done in the process is



- (A) Cx_1^2 (B) $\frac{1}{2} Cx_1^2$
(C) Cx_1 (D) Zero

Correct Option: B

Solution:

8. Two lighter nuclei combine to form a comparatively heavier nucleus by the relation given below:
 ${}_1^2\text{X} + {}_1^2\text{X} = {}_2^4\text{Y}$
 The binding energies per nucleon ${}_1^2\text{X}$ and ${}_2^4\text{Y}$ are 1.1 MeV and 7.6 MeV respectively. The energy released in this process is
 (A) 26 MeV (B) 56 MeV (C) 78 MeV (D) 108 MeV

Correct Option: A

Solution:

9. If E, L, M and G denote the quantities as energy, angular momentum, mass and constant of gravitation respectively, then the dimensions of P in the formula $P = EL^2M^{-5}G^{-2}$ are:-
 (A) $[M^0 L^1 T^0]$
 (B) $[M^{-1} L^{-1} T^2]$
 (C) $[M^1 L^1 T^{-2}]$
 (D) $[M^0 L^0 T^0]$

Correct Option: B

Solution:

10. An ideal spring with spring-constant k is hung from the ceiling and a block of mass M is attached to its lower end. The mass is released with the spring initially unstretched. Then the maximum extension in the spring is
 (A) $\frac{4Mg}{k}$ (B) $\frac{2Mg}{k}$
 (C) $\frac{Mg}{k}$ (D) $\frac{Mg}{2k}$

Correct Option: B

Solution:

11. A stone of mass m tied to a string of length ℓ is rotating along a circular path with constant speed v . The torque on the stone is
 (A) $mv^2/$ (B) zero
 (C) $m\ell v$ (D) mv^2/ℓ

Correct Option: B

Solution:

12. A monochromatic neon lamp with wavelength of 670.5 nm illuminates a photo-sensitive material which has a stopping voltage of 0.48 V. What will be the stopping voltage if the source light is changed with another source of wavelength of 474.6 nm?
 (A) 0.96 V (B) 1.25 V (C) 0.24 V (D) 1.5 V

Correct Option: B

Solution:

13. The displacement of a particle is represented by the equation $y = 3 \cos(\frac{\pi}{4} - 2\omega t)$. The motion of the particle is
 (A) simple harmonic with period $2\pi/\omega$
 (B) simple harmonic with period π/ω
 (C) periodic but not simple harmonic
 (D) non-periodic

Correct Option: B

Solution:

14. The ranges and heights for two projectiles projected with the same initial velocity at angles 42° and 48° with the horizontal are R_1, R_2 and H_1, H_2 respectively. Choose the correct option :
 (A) $R_1 > R_2$ and $H_1 = H_2$
 (B) $R_1 = R_2$ and $H_1 < H_2$
 (C) $R_1 < R_2$ and $H_1 < H_2$
 (D) $R_1 = R_2$ and $H_1 = H_2$

Correct Option: B

Solution:

15. In Young's double slit experiment intensity at a point is of the maximum intensity. Angular position of this point is
 (A) $\sin^{-1}(\lambda/d)$ (B) $\sin^{-1}(\lambda/2d)$
 (C) $\sin^{-1}(\lambda/3d)$ (D) $\sin^{-1}(\lambda/4d)$

Correct Option: C

Solution:

16. A short electric dipole has a dipole moment of $16 \times 10^{-9} \text{ Cm}$. The electric potential due to the dipole at a point at a distance of 0.6 m from the centre of the dipole situated on a line making an angle of 60° with the dipole axis is : $(\frac{1}{4\pi\epsilon_0} = 9 \times 10^9 \text{ Nm}^2/\text{C}^2)$
 (A) 200 V (B) 400 V (C) zero (D) 50 V

Correct Option: A

Solution:

17. An electron moving along the x -axis has a position given by $x = 20te^{-t}$ m, where t is in second. How far is the electron from the origin when it momentarily stops?

(A) 20m (B) $20e$ m
(C) $\frac{20}{e}$ m (D) zero

Correct Option: C**Solution:**

18. A parallel plate capacitor of capacitance 2 F is charged to a potential V . The energy stored in the capacitor is E_1 . The capacitor is now connected to another uncharged identical capacitor in parallel combination. The energy stored in the combination is E_2 . The ratio E_2/E_1 is

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

Correct Option: B**Solution:**

19. When a longitudinal wave propagates through a medium, the particles of the medium execute simple harmonic oscillations about their mean positions. These oscillations of a particle are characterised by an invariant

(A) Kinetic energy
(B) Potential energy
(C) Sum of kinetic energy and potential energy
(D) Difference between kinetic energy and potential energy

Correct Option: C**Solution:**

20. An object of mass 5 kg is thrown vertically upwards from the ground. The air resistance produces a constant retarding force of 10 N throughout the motion. The ratio of time of ascent to the time of descent will be equal to : [Use $g = 10 \text{ m/s}^2$]

(A) 1 : 1 (B) $\sqrt{2} : \sqrt{3}$
(C) $\sqrt{3} : \sqrt{2}$ (D) 2 : 3

Correct Option: C**Solution:**

21. A steel rod of diameter 1.0 cm is clamped firmly at each end when its temperature is 25°C so that it cannot contract on cooling. The tension in the rod at 0°C is given that $\alpha = 1 \times 10^{-5}/^\circ\text{C}$ and $Y = 2 \times 10^{11} \text{ N/m}^2$. What is the tension in the rod?

(A) 3925 N (B) 7000 N (C) 7400 N (D) 4700 N

Correct Option: A**Solution:**

22. The critical angle of a medium for a specific wavelength if the medium has relative permittivity 3 and relative permeability $\frac{4}{3}$ for this wavelength, will be:

(A) 15° (B) 30° (C) 45° (D) 60°

Correct Option: B**Solution:**

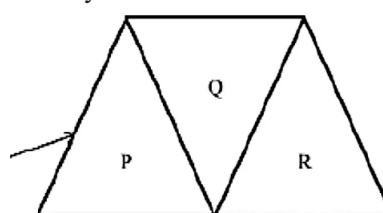
23. If the r.m.s. speed of chlorine molecule is 490 m/s at 27°C , the r.m.s. speed of argon molecules at the same temperature will be (Atomic mass of argon = 39.9u, molecular mass of chlorine = 70.9u)

(A) 751.7 m/s (B) 451.7 m/s (C) 651.7 m/s (D) 551.7 m/s

Correct Option: C**Solution:**

24. A given ray of light suffers minimum deviation in equilateral prism P. Additional prisms Q and R of identical shape and of same material as that of P are now combined as shown in figure.

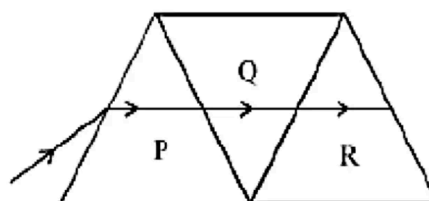
The ray will now suffer



(A) greater deviation (B) no deviation
(C) same deviation as before (D) total internal reflection

Correct Option: C**Solution:**

When the ray suffers minimum deviation, it becomes parallel to the base of prism P. As prisms Q and R are of same material and have identical shape, therefore, the ray continues to be parallel to base of Q and R. Hence final deviation of the ray remains the same as before.



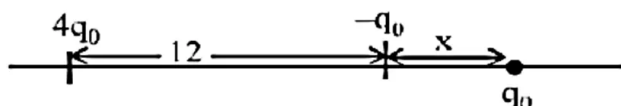
25. A point charge $q_1 = 4q_0$ is placed at origin. Another point charge $q_2 = -q_0$ is placed at $x = 12\text{ cm}$. A proton of charge q_0 is placed on the x-axis such that the electrostatic force on the proton is zero. In this situation, the position of the proton from the origin is:

(A) 12 cm (B) 24 cm (C) 36 cm (D) 48 cm

Correct Option: B

Solution:

Let x be the distance from charge $-q_0$ where electric field is zero.



Using the Coulomb's law

$$\frac{1}{4\pi E_0} \frac{q_0}{x^2} = \frac{1}{4\pi E_0} \frac{4q_0}{(x+12)^2}$$

$$\Rightarrow x+12 = 2x$$

$$x = 12$$

Distance from origin $= x + 12 = 24\text{ cm}$.

26. There are two open organ pipes of the same length and the same material but of different radii. When they are emitting fundamental notes, which of the following is true?
- (A) broader pipe gives note of smaller frequency
(B) both the pipes give notes of the same frequency
(C) narrower pipe gives note of smaller frequency
(D) either of them gives note of smaller or larger frequency depending on the wavelength of the wave.

Correct Option: A

Solution:

$$f = \frac{v}{\lambda} = \frac{v}{(l+e)} \quad f = \frac{v}{4(L+e)} \quad (e = 0.3r)$$

27. The momentum of an electron revolving in n^{th} orbit of hydrogen atom is given by :

(A) $\frac{nh}{2\pi r}$ (B) $\frac{nh}{2r}$
(C) $\frac{nh}{2\pi}$ (D) $\frac{2\pi r}{nh}$

Correct Option: A

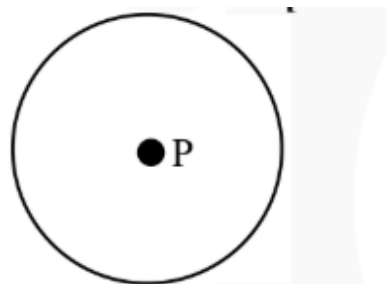
Solution:

Bohr's quantum condition

$$mvr = n \frac{h}{2\pi}$$

$$mv = \frac{nh}{2\pi r}$$

28. A perfectly diamagnetic sphere has a small spherical cavity at its centre, which is filled with a paramagnetic substance. The whole system is placed in a uniform magnetic field $\vec{B}$. Then the field inside the paramagnetic substance is:



- (A) much larger than $|\vec{B}|$ and parallel to $\vec{B}$
(B) much larger than $|\vec{B}|$ but opposite to $\vec{B}$
(C) $\vec{B}$
(D) Zero

Correct Option: D

Solution:

A perfect diamagnetic substance will completely expel the magnetic field. Therefore, there will be no magnetic field inside the cavity of sphere. Hence the paramagnetic substance kept inside the cavity will experience no force.

29. A car is moving on a horizontal curved road with radius 50 m. The approximate maximum speed of car will be, friction between tyres and road is 0.34 [Take $g = 10\text{ ms}^{-2}$]
- (A) 3.4 ms^{-1} (B) 22.4 ms^{-1}
(C) 13 ms^{-1} (D) 17 ms^{-1}

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Correct Option: C

Solution:

$$f_s = \frac{mv^2}{r}$$

For maximum speed in safe turning,

$$f_s = f_s \text{ max} = \mu mg$$

$$v_{\text{max}} (\text{for safe turning}) = \sqrt{\mu rg}$$

$$= \sqrt{0.34 \times 50 \times 10} \approx 13\text{ m/s}.$$

30. Two long current carrying conductors are placed parallel to each other at a distance of 8 cm between them. The magnitude of magnetic field produced at mid-point between the two conductors due to current flowing in them is $300\mu\text{T}$. The equal current flowing in the two conductors is:

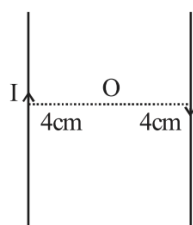
[June 2022 : 29 June Shift 2]

- (A) 30 A in the same direction.
(B) 30 A in the opposite direction.
(C) 60 A in the opposite direction.
(D) 300 A in the opposite direction.

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Correct Option: B

Solution:



$$B \text{ at } O = 2 \frac{\mu_0 I}{2\pi r}$$

$$\frac{2 \times 4\pi \times 10^{-7} I}{2\pi \times 4 \times 10^{-2}} = 3 \times 10^{-4} \text{ T}$$

$$I = 30 \text{ A in opp. direction}$$

31. Transition metal complex with highest value of crystal field splitting (Δ_0) will be

- (A) $[\text{Cr}(\text{H}_2\text{O})_6]^{3+}$
(B) $[\text{Mo}(\text{H}_2\text{O})_6]^{3+}$
(C) $[\text{Fe}(\text{H}_2\text{O})_6]^{3+}$
(D) $[\text{Os}(\text{H}_2\text{O})_6]^{3+}$

Correct Option: D

Solution:

32. The large difference between the melting and boiling points of oxygen and sulphur may be explained on the basis of

- (A) Atomic size (B) Atomicity
(C) Electronegativity (D) Electronegativity

Correct Option: B

Solution:

33. The molar solubility (s) of zirconium phosphate with molecular formula $(\text{Zr}^{4+})_3 (\text{PO}_4^{3-})_4$ is given by relation:

- (A) $\left(\frac{K_{sp}}{6912}\right)^{\frac{1}{7}}$
(B) $\left(\frac{K_{sp}}{5348}\right)^{\frac{1}{6}}$
(C) $\left(\frac{K_{sp}}{8435}\right)^{\frac{1}{7}}$
(D) $\left(\frac{K_{sp}}{9612}\right)^{\frac{1}{3}}$

Correct Option: A

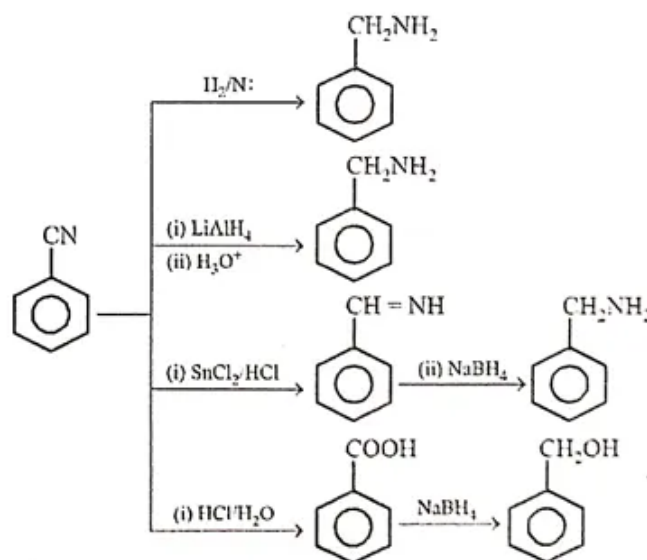
Solution:

34. Which of the following is NOT a correct method of the preparation of benzylamine from cyanobenzene?

- (A) H_2/Ni
(B) (i) LiAlH_4 (ii) H_3O^+ (iii) NaBH_4
(C) (i) $\text{SnCl}_2 + \text{HCl}$ (gas)
(D) (i) $\text{HCl}/\text{H}_2\text{O}$

Correct Option: D

Solution:



35. A vessel at 1000 K contains CO_2 with a pressure of 0.5 atm. Some of CO_2 is converted into CO on addition of graphite. If total pressure at equilibrium is 0.8 atm, then K_p is:

- (A) 0.18 atm (B) 1.8 atm (C) 0.3 atm (D) 3 atm

Correct Option: B

Solution:

36. Which of the following compounds will give silver mirror with ammoniacal silver nitrate?

- (A) Formic acid
(B) Formaldehyde
(C) Benzaldehyde
(D) Acetone

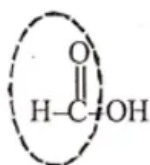
Choose the correct answer from the options given below:

- (A) C and v D only (B) A, b and c Only
(C) A Only (D) B and c Only

Correct Option: B

Solution:

Apart from aldehyde, Formic acid



also gives silver mirror test with ammonical silver nitrate.

37. Which of these reactions is not a part of breakdown of ozone in stratosphere?

- (A) $\text{ClO}(\text{g}) + \text{O}(\text{g}) \rightarrow \text{Cl}(\text{g}) + \text{O}_2(\text{g})$
(B) $\text{Cl}(\text{g}) + \text{O}_3(\text{g}) \rightarrow \text{ClO}(\text{g}) + \text{O}_2(\text{g})$
(C) $2\text{ClO} \rightarrow \text{ClO}_2(\text{g}) + \dot{\text{Cl}}(\text{g})$
(D) $\text{CF}_2\text{Cl}_2(\text{g}) \xrightarrow{\text{uv}} \text{Cl}(\text{g}) + \text{CF}_2\dot{\text{Cl}}(\text{g})$

Correct Option: C

Solution:

38. Among SO_2 , NF_3 , NH_3 , XeF_2 , ClF_3 and SF_4 , the hybridization of the molecule with non-zero dipole moment and highest number of lone-pairs of electrons on the central atom is

- (A) sp^3 (B) dsp^2
(C) $\text{sp}^3 \text{d}^2$ (D) $\text{sp}^3 \text{d}$

Correct Option: D

Solution:

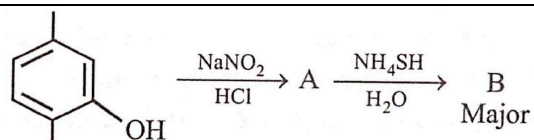
39. The radius of the 2^{nd} orbit of Li^{2+} is x. The expected radius of the 3^{rd} orbit of Be^{3+} is

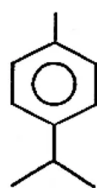
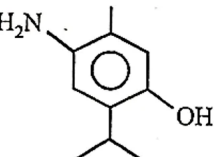
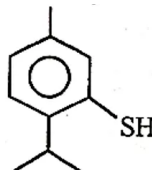
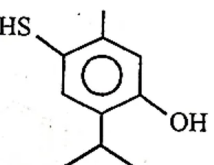
- (A) $\frac{9}{4}x$ (B) $\frac{4}{9}x$
(C) $\frac{27}{16}x$ (D) $\frac{16}{27}x$

Correct Option: C

Solution:

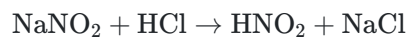
40. Compound 'B' is



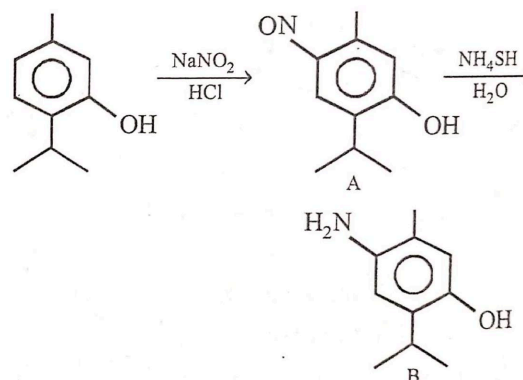
- (A) 
(B) 
(C) 
(D) 

Correct Option: B

Solution:



Nitroso group will attack at para position due to steric considerations.



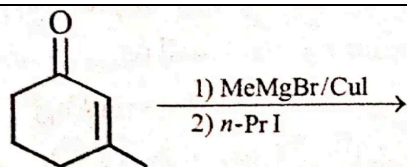
41. Which of the following compounds is likely to show both Frenkel and Schottky defects in its crystalline form?

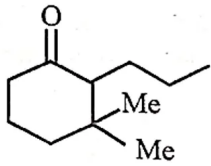
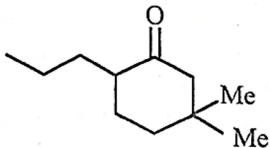
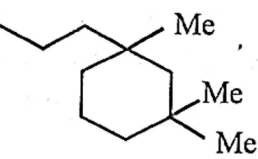
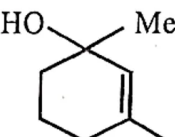
- (A) AgBr (B) CsCl (C) KBr (D) ZnS

Correct Option: A

Solution:

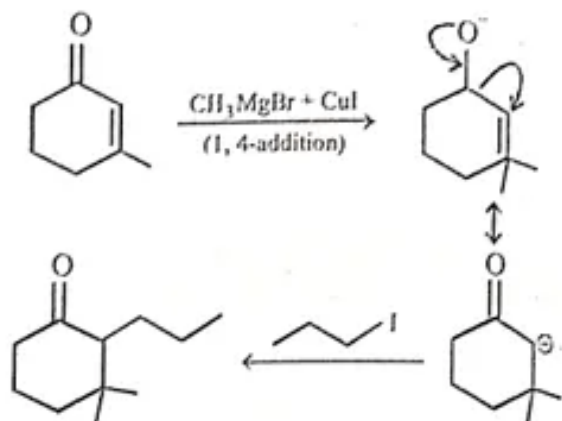
42. Find out the major product from the following reaction



- (A) 
- (B) 
- (C) 
- (D) 

Correct Option: A

Solution:



43. Suitable reaction condition for preparation of methyl phenyl ether is

- (A) $\text{Ph} - \text{Br}, \text{MeO}^- \text{Na}^+$
- (B) $\text{PhO}^- \text{Na}^+, \text{MeOH}$
- (C) $\text{PhO}^- \text{Na}^+, \text{MeBr}$
- (D) Benzene, MeBr

Correct Option: C

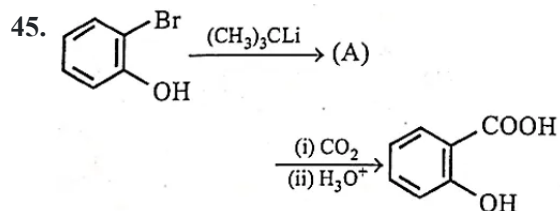
Solution:

44. Which type of isomerism is shown by 2, 3-dichlorobutane?

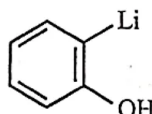
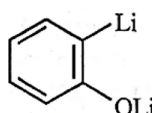
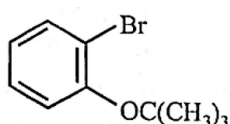
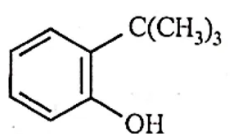
- (A) Structural
- (B) Geometric
- (C) Optical
- (D) Diastereo

Correct Option: C

Solution:



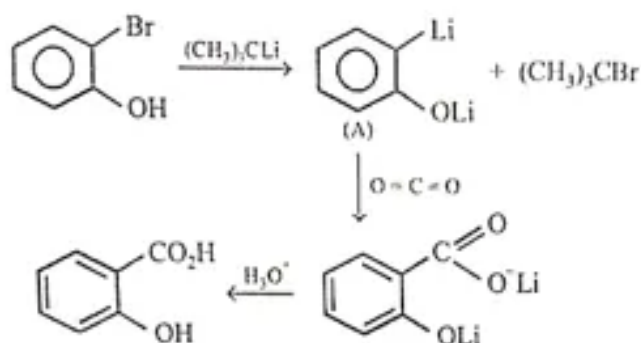
In the given conversion the compound A is :

- (A) 
- (B) 
- (C) 
- (D) 

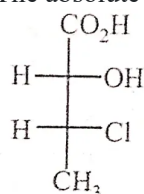
Correct Option: B

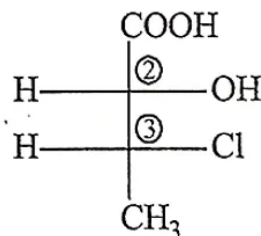
Solution:

$(\text{CH}_3)_3\text{CLi}$ acts as a base or it can give halogen exchange reaction

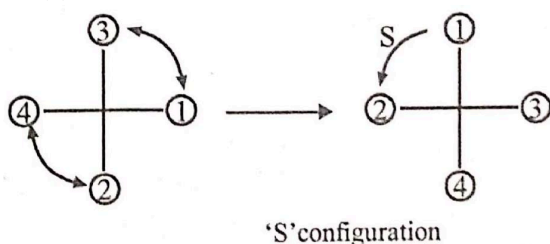


46. The absolute configuration of is:

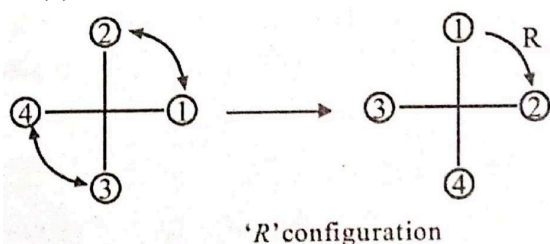


(A) (2*S*, 3*S*)(B) (2*R*, 3*R*)(C) (2*R*, 3*S*)(D) (2*S*, 3*R*)**Correct Option: D****Solution:**

At (2),



At (3),



47. Which hydride among the following is less stable?

(A) BeH₂(B) NH₃

(C) HF

(D) LiH

Correct Option: A**Solution:**

48. Half-life of zero order reaction $A \rightarrow \text{product}$ is 1 hour, when initial concentration of reaction is 2.0 mol L^{-1} . The time required to decrease concentration of A from 0.50 to 0.25 mol L^{-1} is:

(A) 0.5 hour (B) 4 hour (C) 15 min (D) 60 min

Correct Option: C**Solution:**

49. Which one of the following equations does not correctly represent the first law of thermodynamics for the given processes involving an ideal gas? (Assume non-expansion work is zero)

(A) Cyclic process : $q = -w$ (B) Adiabatic process : $\Delta U = -w$

(C) Isochoric process:

$$\Delta U = q$$

(D) Isothermal process:

$$q = -w$$

Correct Option: D**Solution:**

50. An evacuated glass vessel weighs 40.0 g when empty, 135.0 g when filled with a liquid of density 0.95 g mL^{-1} and 40.5 g when filled with an ideal gas at 0.82 atm at 250 K. The molar mass of the gas in g mol^{-1} is : (Given $R = 0.082 \text{ L atm K}^{-1} \text{ mol}^{-1}$)

(A) 35 (B) 50 (C) 75 (D) 125

Correct Option: D**Solution:**

51. Based on the data given below:

$$E_{\text{Cr}_2\text{O}_7^{2-}/\text{Cr}^{3+}}^0 = 1.33 \text{ V} \quad E_{\text{Cl}_2/\text{Cl}^-}^0 = 1.36 \text{ V}$$

$$E_{\text{MnO}_4^-/\text{Mn}^{2+}}^0 = 1.51 \text{ V} \quad E_{\text{Cr}^{3+}/\text{Cr}}^0 = -0.74 \text{ V}$$

the strongest reducing agent is :

(A) Mn^{2+}

(B) Cr

(C) MnO_4^- (D) Cl^- **Correct Option: B****Solution:**

52. The Zeta potential is related to which property of colloids?

(A) Colour

(B) Tyndall effect

(C) Charge on the surface of colloidal particles

(D) Brownian movement

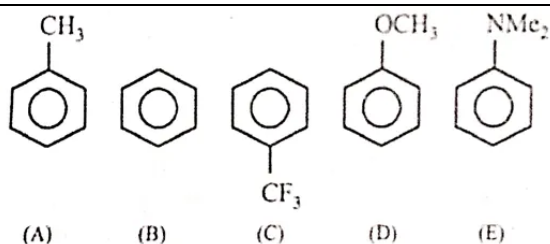
Correct Option: C**Solution:**

53. The number of valence electrons present in the metal among Cr, Co, Fe and Ni which has the lowest enthalpy of atomisation is

(A) 8 (B) 9 (C) 6 (D) 10

Correct Option: C**Solution:**

54. Decreasing order of reactivity towards electrophilic substitution for the following compounds is :



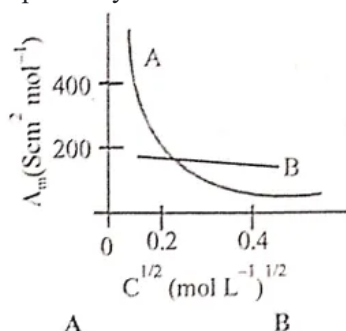
(A) $C > B > A > D > E$ (B) $E > D > A > B > C$

(C) $A > D > E > B > C$ (D) $D > A > E > C > B$

Correct Option: B

Solution:

55. The molar conductivity for electrolytes A and B are plotted against $C^{1/2}$ as shown below. Electrolytes A and B respectively are:



- (A) Weak electrolyte weak electrolyte
 (B) Strong electrolyte strong electrolyte
 (C) Weak electrolyte strong electrolyte
 (D) Strong electrolyte weak electrolyte

Correct Option: C

Solution:

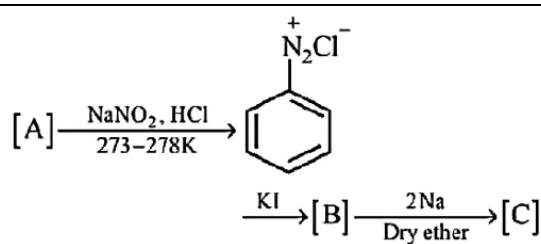
56. Electronic configuration of four elements A, B, C and D are given below : (A) $1s^2 2s^2 2p^3$ (B) $1s^2 2s^2 2p^4$ (C) $1s^2 2s^2 2p^5$ (D) $1s^2 2s^2 2p^2$ Which of the following is the correct order of increasing electronegativity (Pauling's scale)?

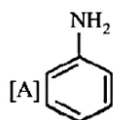
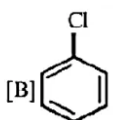
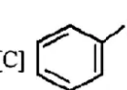
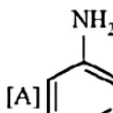
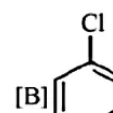
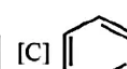
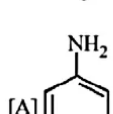
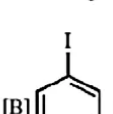
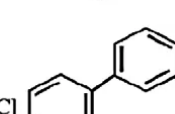
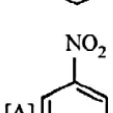
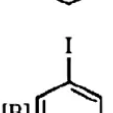
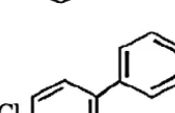
- (A) $A < D < B < C$ (B) $A < C < B < D$
 (C) $A < B < C < D$ (D) $D < A < B < C$

Correct Option: A

Solution:

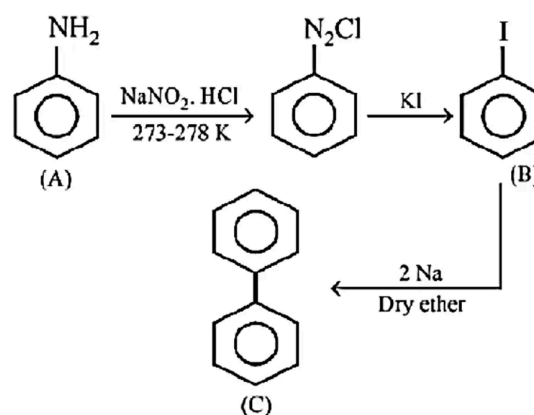
57. Identify [A], [B], and [C], respectively in the following reaction sequence :



- (A) [A]  [B]  [C] 
 (B) [A]  [B]  [C] 
 (C) [A]  [B]  [C] 
 (D) [A]  [B]  [C] 

Correct Option: C

Solution:



58. An antiseptic dettol is a mixture of two compounds 'A' and 'B' where A has 6 'pi' electrons and B has 2 'pi' electrons. What is 'B'?

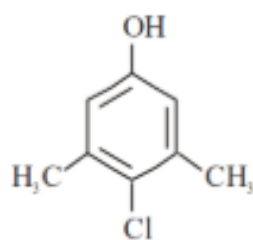
- (A) Bithionol (B) Terpineol
 (C) Chloroxylonol (D) Chloramphenicol

JM 2022

Correct Option: B

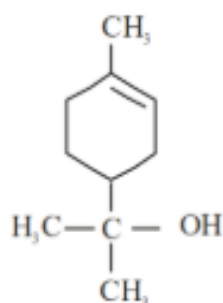
Solution:

Dettol is mixture of



Chloroxylenol
(Compound A)
It has $6\pi e^-$

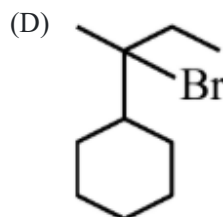
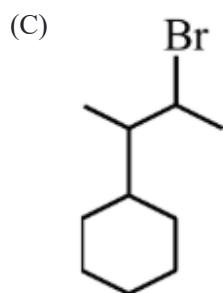
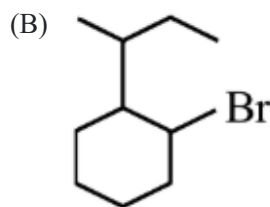
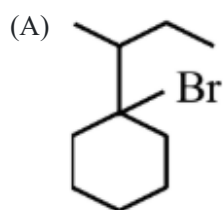
and



Terpineol
(Compound B)
It has $2\pi e^-$

Hence compound 'B' is Terpineol.

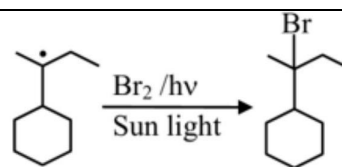
59. When sec-butylcyclohexane reacts with bromine in the presence of sunlight, the major product is:



Correct Option: D

Solution:

JM 2025



Formation of more stable free radical intermediate

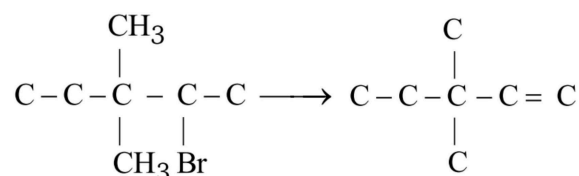
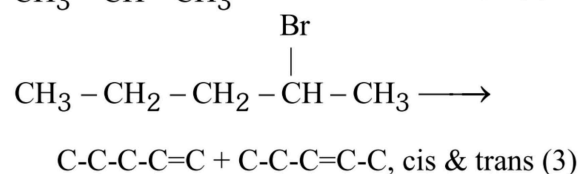
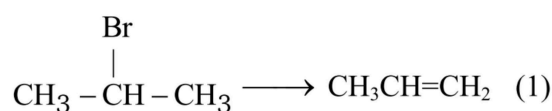
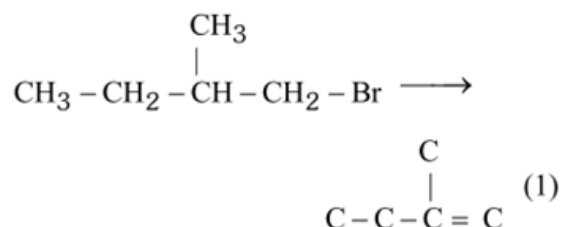
60. The one giving maximum number of isomeric alkenes on dehydrohalogenation reaction is (excluding rearrangement)

- (A) 1-Bromo-2-methylbutane (B) 2-Bromopropane
(C) 2-Bromopentane (D) 2-Bromo-3,3-dimethylpentane

JM 2023

Correct Option: C

Solution:



61. Walking through the forest, the chirping of birds soothes her nerves.

- (A) As she walked through the forest,
(B) Walking through the forest, hearing the chirping of birds soothing her nerves.
(C) The chirping of birds, while walking through the forest, soothed her nerves.
(D) No improvement

Correct Option: A

Solution:



62. (a) The professor discussed / (b) about the new policy / (c) in detail / (d) during the seminar.

- (A) The professor discussed (B) about the new policy
(C) in detail (D) during the seminar

Correct Option: B

Solution:

63. (a) She insisted / (b) to meet the committee members / (c) before making / (d) the final decision.

- (A) She insisted (B) to meet the committee members
(C) before making (D) the final decision

Correct Option: B

Solution:

64. Though the evidence was circumstantial, the lawyer skillfully _ _ _ doubts about the witness's credibility during cross-examination.

- (A) concealed (B) fabricated
(C) instilled (D) neglected

Correct Option: C

Solution:

65. Despite being an expert in her field, she remained _____ and always credited her team for the success.

- (A) arrogant (B) modest (C) boastful (D) dominant

Correct Option: B

Solution:

66. Choose the word which is nearest in meaning to the given word. Finicky

- (A) Easy-going (B) Punctual
(C) Fussy (D) Polite

Correct Option: C

Solution:

67. Choose the word opposite in meaning to the word given in capital. BRUSQUE

- (A) Affable (B) Abrupt (C) Stern (D) Terse

Correct Option: A

Solution:

68. According to the passage, how is attention treated in the digital age?

- (A) It is protected by apps and platforms

(B) It is considered a limited resource exploited by algorithms

(C) It is irrelevant in modern multitasking

(D) It is enhanced through constant connectivity

Correct Option: B

Solution:

69. What is the main goal of digital minimalism according to the passage?

- (A) To eliminate all use of digital devices
(B) To promote increased use of social media responsibly
(C) To encourage purposeful and mindful use of technology
(D) To create new algorithms that reduce screen time

Correct Option: C

Solution:

70. By criticizing the local authorities, the journalist stirred hornet's nest.

- (A) Discovered a beehive
(B) Got himself into a comfortable situation
(C) Helped resolve a major conflict
(D) Created a troublesome or chaotic situation

Correct Option: D

Solution:

71. If DANGER is coded as 11-8-21-14-12-25, then how will be coded the word MACHINE?

- (A) 10-21-15-14-26-17-18 (B) 20-8-10-16-17-22-13
(C) 20-10-8-12-15-16-7 (D) 20-8-10-15-16-21-12

Correct Option: D

Solution:

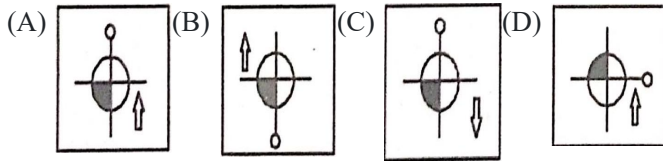
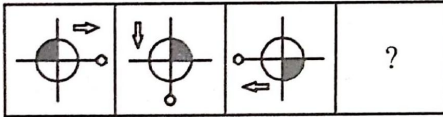
72. X told Y, "Though I am the son of your father, you are my brother". How is X related to Y ?

- (A) Son (B) Daughter
(C) Father (D) None of these

Correct Option: D

Solution:

73. Select the figure that will replace the question mark (?) in the following figure series.



Correct Option: A

Solution:

74. Select the correct option that indicates the arrangement of the given words in the order in which they appear in an English dictionary.

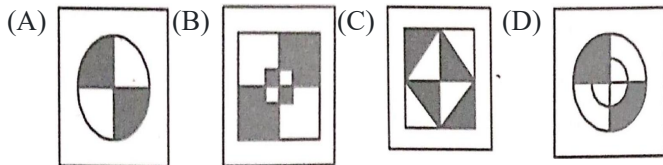
1. Industry,
2. Indent,
3. Indoor,
4. Indolent,
5. Index

- (A) 1, 2, 3, 5, 4 (B) 2, 4, 5, 3, 1
(C) 2, 5, 4, 3, 1 (D) 2, 1, 3, 5, 4

Correct Option: C

Solution:

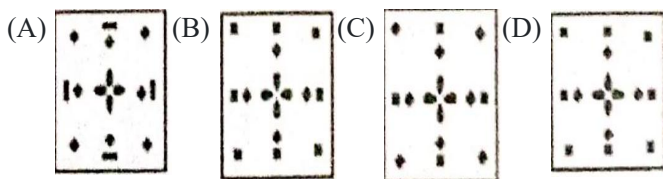
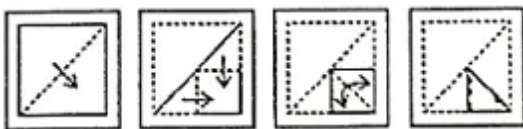
75. Four figures (a), (b), (c), (d) are given; these figures are similar in some way and one figure is different. Select the figure which is different.



Correct Option: D

Solution:

76. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

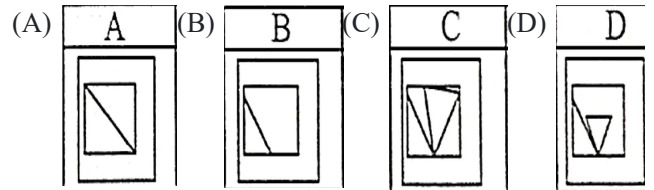
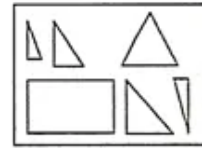


Correct Option: C

Solution:

77. Which of the answer figures is formed from the shape given the problem figure?

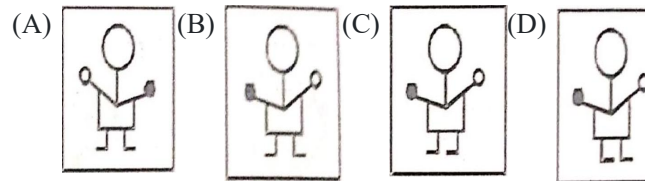
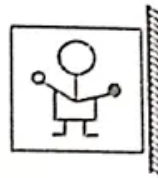
Problem Figure:



Correct Option: A

Solution:

78. Identify the correct answer figure that completes the pattern in the question figure.

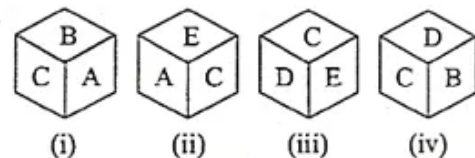


Correct Option: B

Solution:



79. Four forms of a dice are shown below. In this dice which word will be on the surface opposite to the word *D*?

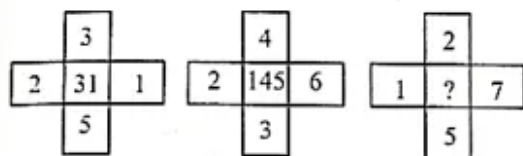


- (A) *D* (B) *A* (C) *B* (D) *C*

Correct Option: B

Solution:

80. In the following question, select the number which can be placed at the sign of question mark in the given alternatives.



- (A) 43 (B) 49 (C) 59 (D) 71

Correct Option: D

Solution:

81. Statements:

Some paints are brushes.

No brush is a canvas.

Conclusions :

I. No paint is a canvas.

II. All brushes can be paints is a possibility.

- (A) Only conclusion I follows (Keval nishkarsh I sahi hai)
 (B) Only conclusion II follows (Keval nishkarsh II sahi hai)
 (C) Either conclusion I or II follows (Ya to nishkarsh I ya II sahi hai)
 (D) Neither conclusion I nor II follows (Na to nishkarsh I aur na hi II sahi hai)
 (E) Both conclusions I and II follow (Dono nishkarsh I aur II sahi hain)

Correct Option: D

Solution:



82. Statements:

Some jars are bowls.

Some spoons are jars.

Conclusions:

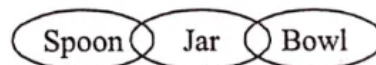
I. No bowl is a spoon.

II. Some jars are definitely not bowls.

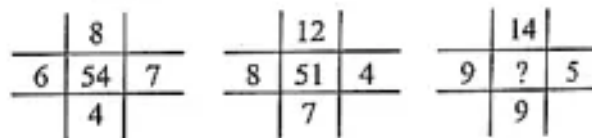
- (A) Only conclusion I follows (Keval nishkarsh I sahi hai)
 (B) Only conclusion II follows (Keval nishkarsh II sahi hai)
 (C) Either conclusion I or II follows (Ya to nishkarsh I ya II sahi hai)
 (D) Neither conclusion I nor II follows (Na to nishkarsh I aur na hi II sahi hai)
 (E) Both conclusions I and II follow (Dono nishkarsh I aur II sahi hain)

Correct Option: B

Solution:



83. Select the missing number from the given responses.



- (A) 53 (B) 71 (C) 76 (D) 68

Correct Option: D

Solution:

84. From the given alternative words, select the word which cannot be formed using the letters of the given word :

Given : IMPASSIONABLE

- (A) IMPASSABLE (B) IMPOSSIBLE
 (C) IMPASSIVE (D) IMPASSION

Correct Option: C

Solution:

85. Three of the following four words are alike in a certain way and one is different. Find the odd one out.

- (A) Hexagon (B) Ellipse
 (C) Parallelogram (D) Rhombus

Correct Option: B

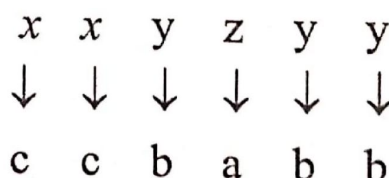
Solution:

86. xxyzyy :: ccbabb :: xxyzyy :

- (A) abbacc (B) bbacca (C) abbcca (D) cbbaab

Correct Option: D

Solution:



Pairs of opposite letters

Therefore,

x y y z z y
↓ ↓ ↓ ↓ ↓ ↓
c b b a a b

87. TTT : 777 :: RRR : ?

- (A) 555 (B) 666 (C) 888 (D) 999

Correct Option: D

Solution:

88. In a certain code, '253' means 'books are old'; '546' means 'man is old' and '378' means 'buy good books'. What stands for "are" in that code?

- (A) 2 (B) 4 (C) 5 (D) 6

Correct Option: A

Solution:

2 (5) 3 ⇒  are (old)

(5) 4 6 ⇒ man is (old)

 7 8 ⇒ buy good 

Codes are :

5 ⇒ old 4 ⇒ man or is

8 ⇒ buy or good

3 ⇒ books 6 ⇒ man or is

2 ⇒ are 7 ⇒ buy or good

2 stands for "are" in that code.

89. Which letter-cluster will replace the question mark (?) in the following series?

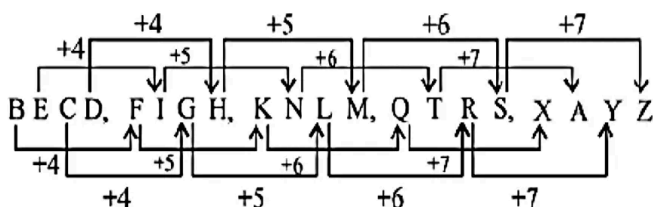
BECD, FIGH, KNLM, ?, XAYZ

- (A) QWSU (B) ORPQ (C) PSQR (D) QTRS

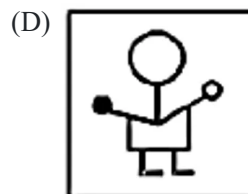
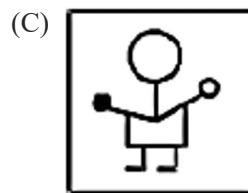
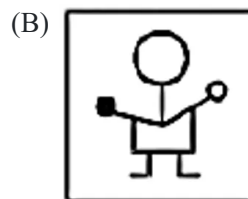
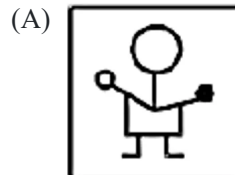
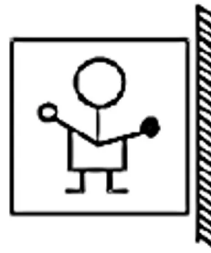
Correct Option: D

Solution:

The pattern is

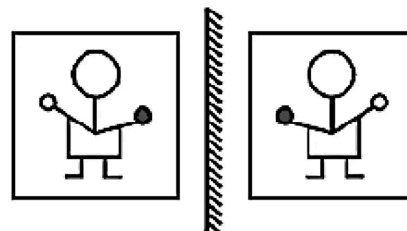


90. Identify the answer figure that will complete the pattern in the question figure.



Correct Option: B

Solution:



91. For a biased dice, the probability for the different faces turn up are

Face	1	2	3	4	5	6
P	0.10	0.32	0.21	0.15	0.05	0.17

The dice is tossed and it is told that either the face 1 or face 2 has shown up, then the probability that it is face 1 is

- (A) $\frac{16}{21}$ (B) $\frac{1}{10}$
(C) $\frac{5}{16}$ (D) $\frac{5}{21}$



Correct Option: D

Solution:

92. If A and B are two events such that $P(A) = \frac{1}{3}$, $P(B) = \frac{1}{5}$ and $P(A \cup B) = \frac{1}{2}$, then $P(A | B') + P(B | A')$ is equal to

- (A) $\frac{3}{4}$ (B) $\frac{5}{8}$
(C) $\frac{5}{4}$ (D) $\frac{7}{8}$

Correct Option: B

Solution:

93. If the plane $x - 3y + 5z = d$ passes through the point $(1, 2, 4)$, then the lengths of the intercepts cut by it on the axes of X, Y, Z respectively, are

- (A) 15, -5, 3 (B) 1, -5, 3
(C) -15, 5, -3 (D) 1, -6, 20

Correct Option: A

Solution:

94. Under what condition do $\langle \frac{1}{\sqrt{2}}, \frac{1}{2}, k \rangle$ represent direction cosines of a line?

- (A) $k = \frac{1}{2}$ (B) $k = -\frac{1}{2}$
(C) $k = \pm \frac{1}{2}$ (D) k can take any value

Correct Option: C

Solution:

95. If the position vectors of the vertices A, B, C of a triangle ABC are $7\hat{j} + 10\hat{k}$, $-\hat{i} + 6\hat{j} + 6\hat{k}$ and $-4\hat{i} + 9\hat{j} + 6\hat{k}$ respectively, the triangle is:

- (A) equilateral
(B) isosceles
(C) scalene
(D) right angled and isosceles also

Correct Option: D

Solution:

96. If $\vec{a}$, $\vec{b}$, $\vec{c}$ are three non-coplanar vectors, then $[\vec{a} + \vec{b} + \vec{c}, \vec{a} - \vec{c} - \vec{a} - \vec{b}]$ is equal to

- (A) 0
(B) $2[\vec{a} \vec{b} \vec{c}]$
(C) $-3[\vec{a} \vec{b} \vec{c}]$
(D) $2[\vec{a} \vec{b} \vec{c}]$

Correct Option: C

Solution:

97. Statement 1: Integrating factor of $\frac{dy}{dx} + y = x^2$ is e^x
Statement 2: Integrating factor of $\frac{dy}{dx} + P(x)y = Q(x)$ is $e^{\int P(x)dx}$

- (A) (a) Statement -1 is false, Statement-2 is true
(B) (b) Statement -1 is true, Statement-2 is true; Statement -2 is a correct explanation for Statement-1
(C) (c) Statement -1 is true, Statement-2 is true; Statement -2 is not a correct explanation for Statement-1
(D) (d) Statement -1 is true, Statement-2 is false

Correct Option: B

Solution:

98. The solution of the differential equation $(1 + e^{\frac{x}{y}}) dx + e^{\frac{x}{y}} (1 + \frac{x}{y}) dy = 0$ is

- (A) $ye^x + x = C$ (B) $xe^y + y = C$
(C) $ye^{\frac{x}{y}} + y = C$ (D) $ye^{\frac{x}{y}} + y = C$

Correct Option: D

Solution:

99. The value of $\int_0^{\pi} \frac{e^{\cos x} \sin x}{(1 + \cos^2 x)(e^{\cos x} + e^{-\cos x})} dx$ is equal to

- (A) $\frac{\pi^2}{4}$ (B) $\frac{\pi^2}{2}$
(C) $\frac{\pi}{4}$ (D) $\frac{\pi}{2}$

Correct Option: C

Solution:

100. If $\int \frac{6x+7}{\sqrt{(x-5)(x-4)}} dx = A\sqrt{x^2-9x+20} + B \log |$ then the values of A and B are

- (A) 6, 34 (B) 3, 9
(C) 12, 17 (D) None of these

Correct Option: A

Solution:

101. The maximum value of $\frac{\log x}{x}$ is

- (A) e (B) 2e
(C) $\frac{1}{e}$ (D) $\frac{2}{e}$

Correct Option: A**Solution:**102. If $\sin y = x \sin(a + y)$, then value of $\frac{dy}{dx}$ is

- (A) $\frac{\sin(a+y)}{\sin a}$ (B) $\frac{\sin^2(a+y)}{\sin a}$
 (C) $\sin^2(a + y)$ (D) $\frac{\cos^2(a+y)}{\sin a}$

Correct Option: B**Solution:**103. If $f(x) = \begin{cases} \frac{\sqrt{1+kx}-\sqrt{1-kx}}{x} & \text{for } -1 \leq x < 0 \\ 2x^2 + 3x - 2, & \text{for } 0 \leq x \leq 1 \end{cases}$ is continuous at $x = 0$, then $k =$

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

Correct Option: C**Solution:**

104. If the system of equations

$$x + y + z = 16$$

$$2x + 5y + \alpha z = \beta$$

$$x + 2y + 3z = 14$$

has infinitely many solutions, then $\alpha + \beta$ is equal to:

- (A) 8 (B) 36 (C) 44 (D) 48

Correct Option: C**Solution:**105. Let A be a 3×3 invertible matrix. If $|\text{adj}(24A)| = \text{adj} |(3 \text{adj}(2A))|$, then $|A|^2$ is equal to:

- (A) 66 (B) 2^{12} (C) 2^6 (D) 1

Correct Option: C**Solution:**106. The value of x satisfying the equation $3 \tan^{-1} \frac{1}{2+\sqrt{3}} - \tan^{-1} \frac{1}{x} = \tan^{-1} \frac{1}{3}$ is

- (A) $x = 2$ (B) $x = \frac{1}{2}$
 (C) $x = \frac{1}{2-\sqrt{3}}$ (D) none of these

Correct Option: A**Solution:**107. Let $t: (4, 6) \rightarrow (6, 8)$ be a function defined by $f(x) = x + \left[\frac{x}{2}\right]$ (where $[\cdot]$ denotes the greatest integer function). Then $f^{-1}(x)$ is equal to?

- (A) $x - \left[\frac{x}{2}\right]$
 (B) $-x - 2$
 (C) $x - 2$

$$(D) \frac{1}{x + \left[\frac{x}{2}\right]}$$

Correct Option: C**Solution:**108. Let $S = \{1, 2, 3, \dots, 2022\}$. Then the probability that randomly chosen number n from the set S satisfies $\text{HCF}(n, 2022) = 1$ is:

- (A) $\frac{128}{1011}$ (B) $\frac{166}{1011}$
 (C) $\frac{127}{337}$ (D) $\frac{112}{337}$

Correct Option: D**Solution:**

109. Find the mean deviation about the mean for the data.

x_i	5	10	15	20	25
f_i	7	4	6	3	5

- (A) 6 (B) 7.3 (C) 8 (D) 6.32

Correct Option: D**Solution:**110. If value of $\lim_{x \rightarrow a} \frac{\sqrt{a+2x}-\sqrt{3x}}{\sqrt{3a+x}-2\sqrt{x}}$ is equal to $\frac{2\sqrt{3}}{m}$, where m equal to

- (A) 2 (B) 8 (C) 9 (D) 3

Correct Option: C**Solution:**111. What is the shortest distance of the point $(1, 2, 3)$ from $-x$ -axis?

- (A) 1 (B) $\sqrt{6}$
 (C) $\sqrt{13}$ (D) $\sqrt{14}$

Correct Option: C**Solution:**112. Let P be the point $(1, 0)$ and Q a point on the locus $y^2 = 8x$. The locus of midpoint of PQ is

- (A) $y^2 - 4x + 2 = 0$ (B) $y^2 + 4x + 2 = 0$
 (C) $x^2 + 4y + 2 = 0$ (D) $x^2 - 4y + 2 = 0$

Correct Option: A**Solution:**113. The set of values of k for which the circle $C: 4x^2 + 4y^2 - 12x + 8y + k = 0$ lies inside the fourth quadrant and the point $(1, -\frac{1}{3})$ lies on or inside the circle C is:

- (A) An empty set (B) $(6, \frac{95}{9}]$
 (C) $[\frac{80}{9}, 10)$ (D) $(9, \frac{92}{9}]$

Correct Option: D

Solution:

Given circle is $4x^2 + 4y^2 - 12x + 8y + k = 0$

$$\Rightarrow x^2 + y^2 - 3x + 2y + \left(\frac{k}{4}\right) = 0$$

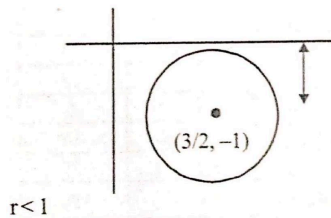
Centre $\left(\frac{3}{2}, -1\right)$; $r = \sqrt{\frac{13-k}{2}}$ Here, $r \geq 0$, then $\sqrt{\frac{13-k}{2}} \geq 0$.

So, $k \leq 13$ (i).

(i) Point $\left(1, \frac{-1}{3}\right)$ lies on or inside circle C

$$\Rightarrow S_1 \leq 0 \Rightarrow k \leq \frac{92}{9} \text{(ii)}$$

(ii) C lies in 4th quadrant



$$\Rightarrow \frac{\sqrt{13-k}}{2} < 1 \Rightarrow k < 9 \text{(iii)}$$

Hence (i) $\cap$ (ii) $\cap$ (iii) $\Rightarrow k \in \left(9, \frac{92}{9}\right]$

114. The angle between the pair of straight lines $y^2 \sin^2 \theta - xy \sin^2 \theta + x^2 (\cos^2 \theta - 1) = 0$ is

- (A) $\frac{\pi}{3}$ (B) $\frac{\pi}{4}$
(C) $\frac{2\pi}{3}$ (D) $\frac{\pi}{2}$

Correct Option: D

Solution:

115. If $(-4, 5)$ is one vertex and $7x - y + 8 = 0$ is one diagonal of a square, then the equation of the second diagonal is:

- (A) $x + 3y = 21$ (B) $2x - 3y = 7$
(C) $x + 7y = 31$ (D) $2x + 3y = 21$

Correct Option: C

Solution:

116. Let α_1, α_2 ($\alpha_1 < \alpha_2$) be the values of α for the points $(\alpha, -3)$, $(2, 0)$ and $(1, \alpha)$ to be collinear. Then the equation of the line, passing through (α_1, α_2) and making an angle of $\frac{\pi}{3}$ with the positive direction of the x -axis, is:

- (A) $x - \sqrt{3}y - 3\sqrt{3} + 1 = 0$ (B) $\sqrt{3}x - y + \sqrt{3} + 3 = 0$

- (C) $x - \sqrt{3}y + 3\sqrt{3} + 1 = 0$ (D) $\sqrt{3}x - y + \sqrt{3} - 3 = 0$

Correct Option: B

Solution:

117. The value of x in $(0, \pi)$ which satisfy the equation $8^{1+|\cos x|+|\cos^2 x|+|\cos^3 x|+\dots+0\infty} = 4^3$ is

- (A) $\left\{\frac{\pi}{2}, \frac{3\pi}{4}\right\}$
(B) $\left\{\frac{\pi}{4}, \frac{3\pi}{4}\right\}$
(C) $\left\{\frac{\pi}{3}, \frac{2\pi}{3}\right\}$
(D) $\left\{\frac{\pi}{6}, \frac{5\pi}{6}\right\}$

Correct Option: C

Solution:

118. The sum of n terms of two arithmetic series are in the ratio $2n + 3 : 6n + 5$, then the ratio of their 13th terms is

- (A) 53:155 (B) 27:87 (C) 29:83 (D) 31:89

Correct Option: A

Solution:

119. If $\left(2 + \frac{x}{3}\right)^{55}$ is expanded in the ascending powers of x and the coefficients of powers of x in two consecutive terms of the expansion are equal, then these terms are:

- (A) 7th and 8th
(B) 8th and 9th
(C) 28th and 29th
(D) 27th and 28th

Correct Option: A

Solution:

120. On a railway route there are 20 stations. What is the number of different tickets required in order that it may be possible to travel from every station to every other station?

- (A) 40 (B) 380 (C) 400 (D) 420

Correct Option: B

Solution:

121. The number of four digit numbers with distinct digits is:

- (A) $9 \times {}^9C_3$ (B) $9 \times {}^9P_3$
(C) ${}^{10}C_3$ (D) ${}^{10}P_3$

Correct Option: B

Solution:

122. Which of the following is the solution set of $3x - 7 > 5x - 1$ for all $x \in \mathbb{R}$?

- (A) $(-\infty, -3)$ (B) $(-\infty, -3]$
(C) $(-3, \infty)$ (D) $(-3, 3)$

Correct Option: A

Solution:

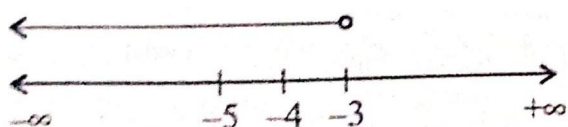
We have, $3x - 7 > 5x - 1$ Transferring the term $5x$ to L.H.S. and the term -7 to R.H.S.:

$$3x - 5x > -1 + 7 \Rightarrow -2x > 6$$

Dividing both sides by -2 , and reversing the inequality sign:

$$x < -3$$

With the help of number line, we can easily look for the numbers less than -3 .



$\therefore$ Solution set is $(-\infty, -3)$, i.e. all the numbers lying between $-\infty$ and -3 but $-\infty$ and -3 are not included as $x < -3$.

123. If α, β be the roots of the equation $2x^2 - 35x + 2 = 0$, then the value of $(2\alpha - 35)^3 \cdot (2\beta - 35)^3$ is equal to

- (A) 1 (B) 64
(C) 8 (D) None of these

Correct Option: B

Solution:

124. If α, β are the roots of the equation $ax^2 + bx + c = 0$, then find the value of

$$\frac{\alpha}{a\beta + b} + \frac{\beta}{a\alpha + b}$$

- (A) $\frac{2}{a}$ (B) $\frac{2}{b}$
(C) $\frac{2}{c}$ (D) $-\frac{2}{a}$

Correct Option: D

Solution:

125. The real part of the complex number $\frac{(1+2i)^8 \cdot (1-2i)^2}{(3+2i) \cdot (4-6i)}$ is equal to:

- (A) $\frac{500}{13}$ (B) $\frac{110}{13}$
(C) $\frac{55}{6}$ (D) $\frac{550}{13}$

Correct Option: D

Solution:

126. If $\tan \theta = -\frac{1}{\sqrt{3}}$, then the general solution of the equation is

- (A) $2n\pi + \frac{\pi}{6}, n \in \mathbb{I}$ (B) $n\pi + \frac{\pi}{6}, n \in \mathbb{I}$
(C) $2n\pi - \frac{\pi}{6}, n \in \mathbb{I}$ (D) $n\pi - \frac{\pi}{6}, n \in \mathbb{I}$

Correct Option: D

Solution:

127. The value of $\sin 765^\circ$ is $\frac{1}{\sqrt{n}}$. Value of n is

- (A) 2 (B) 3 (C) 4 (D) 0

Correct Option: A

Solution:

128. The relation R defined on the set of natural numbers as $\{(a, b) : a \text{ differs from } b \text{ by } 3\}$ is given

- (A) $\{(1, 4), (2, 5), (3, 6), \dots\}$ (B) $\{(4, 1), (5, 2), (6, 3), \dots\}$
(C) $\{(1, 3), (2, 6), (3, 9), \dots\}$ (D) None of these

Correct Option: A

Solution:

129. If $A = \{a, \{b\}\}$, then $P(A)$ equals.

- (A) $\{\emptyset, \{a\}, \{\{b\}\}, \{a, \{b\}\}\}$
(B) $\{\emptyset, \{a\}\}$
(C) $\{\{a\}, \{b\}, \emptyset\}$
(D) None of these

Correct Option: A

Solution:

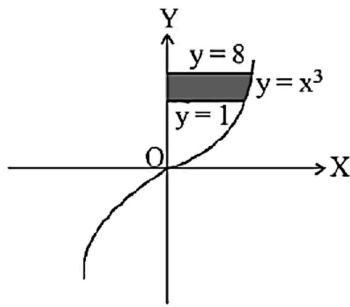
130. The area enclosed between the graph of $y = x^3$ and the lines $x = 0, y = 1, y = 8$ is

- (A) $\frac{45}{4}$ (B) 14
(C) 7 (D) None

Correct Option: A

Solution:

Given curve is $y = x^3$ or $x = y^{1/3}$



Considering the areas with y-axis, we find that required area

$$\begin{aligned}
 &= \int_1^8 y^{1/3} dy = \left[\frac{y^{4/3}}{4/3} \right]_1^8 = \frac{3}{4} [8^{4/3} - 1^{4/3}] \\
 &= \frac{3}{4} \times (16 - 1) = \frac{3}{4} \times 15 = \frac{45}{4} \text{ sq. units}
 \end{aligned}$$

BITSAT Solved Paper 2025 Session-I - ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10
Ans.	A	C	D	B	A	A	B	A	B	B
Que.	11	12	13	14	15	16	17	18	19	20
Ans.	B	B	B	B	C	A	C	B	C	C
Que.	21	22	23	24	25	26	27	28	29	30
Ans.	A	B	C	C	B	A	A	D	C	B
Que.	31	32	33	34	35	36	37	38	39	40
Ans.	D	B	A	D	B	B	C	D	C	B
Que.	41	42	43	44	45	46	47	48	49	50
Ans.	A	A	C	C	B	D	A	C	D	D
Que.	51	52	53	54	55	56	57	58	59	60
Ans.	B	C	C	B	C	A	C	B	D	C
Que.	61	62	63	64	65	66	67	68	69	70
Ans.	A	B	B	C	B	C	A	B	C	D
Que.	71	72	73	74	75	76	77	78	79	80
Ans.	D	D	A	C	D	C	A	B	B	D
Que.	81	82	83	84	85	86	87	88	89	90
Ans.	D	B	D	C	B	D	D	A	D	B
Que.	91	92	93	94	95	96	97	98	99	100
Ans.	D	B	A	C	D	C	B	D	C	A
Que.	101	102	103	104	105	106	107	108	109	110
Ans.	A	B	C	C	C	A	C	D	D	C
Que.	111	112	113	114	115	116	117	118	119	120
Ans.	C	A	D	D	C	B	C	A	A	B
Que.	121	122	123	124	125	126	127	128	129	130
Ans.	B	A	B	D	D	D	A	A	A	A