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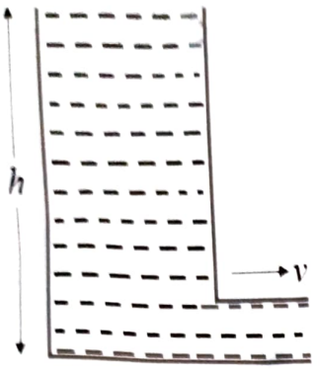
Previous Year Paper

(Physics)

10 Feb, 2024

1. From the pipe shown in the figure, the velocity of efflux v is found slightly less than $\sqrt{2gh}$.



This is due to-

(a) Surface tension
(b) Viscosity
(c) Compressibility
(d) Acceleration due to gravity of water

2. Surface tension of a liquid at critical temperature is -

(a) Zero
(b) Infinite
(c) The same as the other temperature
(d) Can not be determined

3. A liquid will not wet the surface of a solid if the angle of contact is -

(a) Acute angle (b) Obtuse angle (c) Zero (d) None of these

4. The viscous force on a spherical body moving with speed v is proportional to-

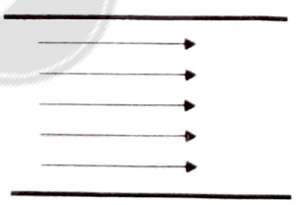
(a) $\sqrt{v}$ (b) $\frac{1}{\sqrt{v}}$ (c) v (d) v^2

5. Three capillaries of lengths l, 2l and 4l and of radii r, 2r and 4r respectively are connected in series and a flu is flowing through these capillaries placed horizontally. Pressure difference across the capillaries will be the ratio -

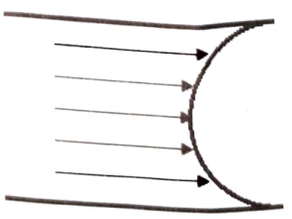
(a) 1 : 8 : 64 (b) 1 : 2 : 4 (c) 4 : 2 : 1 (d) 64 : 8 : 1

6. A viscous fluid is flowing through a cylindrical tube. The velocity distribution of the fluid is best represen by the diagram -

(a)



(b)



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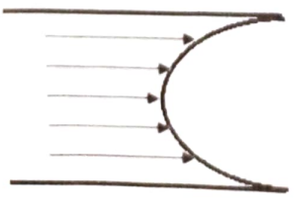
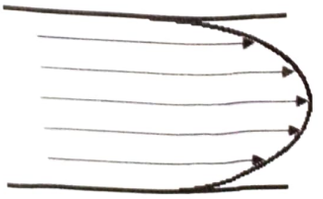


(d)



7. When capillary tube of radius r is immersed in water, water rises in it to a height h and mass of water in the capillary tube is m. If the radius of the tube is halved, mass of water in the capillary tube will be -

(a) m (b) 2m (c) m/2 (d) m/4

8. The ratio of excess pressure inside a bubble and a drop of same radius is -

(a) 2 (b) 0.5 (c) 4 (d) 0.25

9. A wire is stretched within elastic limit. Its potential energy is given by -

(a) Stress × Strain × Volume (b) Stress × Strain / Volume

(c) 2(Stress × Strain × Volume) (d) $\frac{1}{2}$(Stress × Strain × Volume)

10. The velocity of a liquid flowing in a tube of cross-sectional area A is v. The equation $A \times v =$ Constant represents -

(a) Bernoulli's theorem (b) Equation of continuity

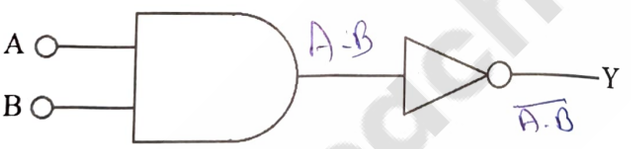
(c) Stoke's law (d) None of the above

11. In a BJT, the fixed bias scheme fixes -

(a) The collector voltage (b) The collector current

(c) The base current (d) The base voltage

12. The output of the following gate is -



(a) $Y = \overline{A + B}$ (b) $Y = \overline{A.B}$ (c) $Y = \bar{A} + \bar{B}$ (d) $Y = \bar{A}.\bar{B}$

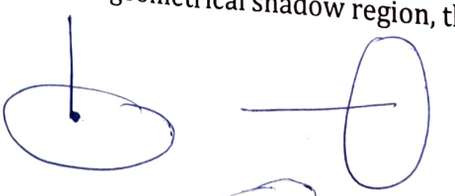
13. Light is incident normally on a circular disc. At the center of geometrical shadow region, the intensity is always -

(a) Zero

(b) Minimum

(c) Maximum

(d) Minimum and maximum depending upon the number of Fresnel half-period zones blocked by the disc



14. Two coherent sources of intensity ratio 25:4 are used in an interference experiment. The ratio of intensities of maxima and minima in the interference pattern is -

(a) 25:16 (b) 7:3 (c) 4:9 (d) 49:9

P.T.O.

15. A half wave plate produces phase difference between ordinary and extra ordinary waves of -

(a) 2π (b) $3\pi/2$ (c) $\pi/2$ (d) π

16. The principal focal length of zone plate is -

(a) $f = \frac{r_n^2}{n\lambda}$ (b) $f = \frac{r_n}{n\lambda}$ (c) $f = \frac{r_n}{n\lambda^2}$ (d) $f = \frac{1.22 r_n}{n\lambda}$

17. A plane transmission grating having 5000 lines per cm is being used under normal incidence of light. The highest order spectrum that can be seen for the light of wavelength 4800Å is -

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

18. The points having unit lateral magnification in a lens system are called -

(a) Focal points (b) Nodal points (c) Principal points (d) Centers of curvature

19. When light is incident on the surface of a transparent medium at the angle of polarization, then the reflected and refracted beams are -

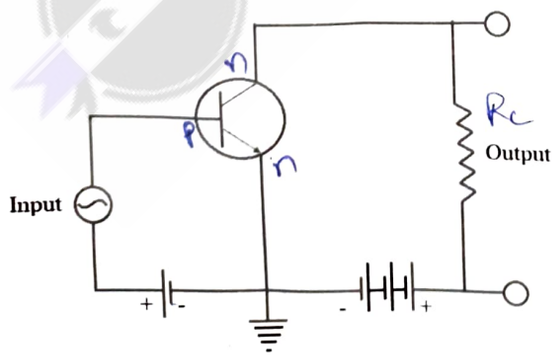
(a) Parallel (b) Inclined at 45°

(c) Inclined at 60° (d) Perpendicular to each other

20. An achromatic lens is formed from two thin lenses in contact having powers of 12D and –8D. The focal length of the lens combination is -

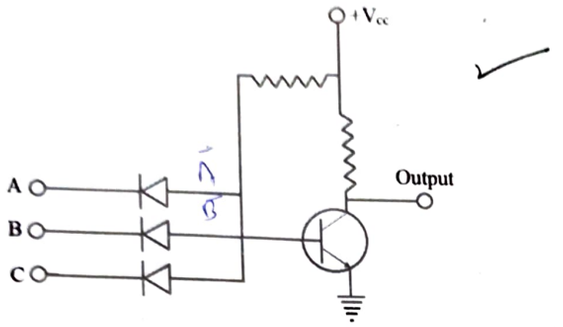
(a) 25 cm (b) –25 cm (c) 5 cm (d) –5 cm

21. The circuit shown in the below diagram is that of a/an -



(a) Oscillator (b) Modulator (c) Amplifier (d) Rectifier

22. The following circuit represents -



(a) NOR gate (b) NOT gate (c) AND gate (d) NAND gate

23. For electronic devices, Silicon is preferred to Germanium because -

(a) Silicon is cheaper than Germanium
(b) Silicon is more compact than Germanium
(c) The leakage current is less than in Silicon than Germanium
(d) Silicon has a better appearance than Germanium

24. The capacitance of p-n junction under reverse bias -

(a) Increases as the reverse bias is increased
(b) Increases as the reverse bias is decreased
(c) Mostly depends on the reverse saturation current
(d) Renders the junction more effective at higher frequencies

25. Knee voltage is -

(a) The forward voltage at which the current through the p-n junction starts to increase rapidly
(b) The reverse voltage at which breakdown occurs in p-n junction diode
(c) The voltage at which junction starts burning
(d) The same as constant potential of junction

26. The leakage current I_{CBO} flows through the -

(a) Emitter and base leads (b) Emitter and collector leads
(c) Base and collector leads (d) Emitter, base and collector leads

27. In comparison to CB amplifier, a CE amplifier has -

(a) A higher output resistance (b) A lower input resistance
(c) A higher current amplification (d) A lower current amplification

28. The magnitude of Zener current is -
(a) Limited by external circuit resistance
(b) Determined by the Zener voltage
(c) Independent of external circuit resistance
(d) Independent of temperature

29. For a transistor, $\beta = 50$ and base current $I_B = 25\mu A$, the emitter current will be -
(a) 2.525 mA (b) 1.275 mA (c) 1.835 mA (d) 1.645 mA

30. In a CE amplifier, the phase difference between input and output voltage signal is -
(a) 90° (b) 0° (c) 270° (d) 180°

31. The temperature of water of mass m increases from T_1 to T_2. If C is the specific heat capacity of water, then total increase in entropy of water is given by -
(a) $mC(T_2 - T_1)$ (b) $mC(T_1 - T_2)$ (c) $mC \log_e \frac{T_1}{T_2}$ (d) $mC \log_e \frac{T_2}{T_1}$

32. The Gibb's function G in the thermodynamics is defined as -

$$G = H - TS$$

where H is the enthalpy, T is the absolute temperature and S is the entropy. In an isothermal, isobaric, reversible process, G -
(a) Remains constant but not zero
(b) Varies linearly
(c) Varies non-linearly
(d) Is zero

33. The work done W during an isothermal process in which the gas expands from an initial volume V1 to a final volume V2 is given by -
(R = gas constant, T = absolute temperature)
(a) $R(V_2 - V_1) \log_e \frac{T_1}{T_2}$ (b) $R(T_2 - T_1) \log_e \frac{V_2}{V_1}$
(c) $RT \log_e \frac{V_2}{V_1}$ (d) $RT \log_e \frac{V_1}{V_2}$

34. Which is the correct relation between Boyle temperature (T_B), temperature of inversion (T_i) and critic temperature (T_c) of a van der Waal's gas ?
(a) $T_i > T_B > T_c$ (b) $T_i > T_c > T_B$ (c) $T_c > T_B > T_i$ (d) None of these

35. When a gas is subjected to an adiabatic change, the gas is -
(a) Thermally isolated from its surroundings
(b) Mechanically isolated from its surroundings
(c) In thermal as well as mechanical contact with its surroundings
(d) In thermal contact with its surroundings

36. An element P decays first by positron emission, then followed by three α-particles and a γ-ray in succession. If the product nucleus has the mass number 225 and atomic number 87, the mass number and atomic number of the element P are -

(a) 237, 93 (b) 237, 94 (c) 238, 93 (d) 237, 92

37. The mass defect for the nucleus of helium is 0.0303amu. The binding energy per nucleon for helium is about -

(a) 1 MeV (b) 7 MeV (c) 14 MeV (d) 28 MeV

38. The average energy released per fission is -

(a) 108 MeV (b) 200 MeV (c) 1000 MeV (d) More than 1000 MeV

39. Fusion reaction is energetically possible in -

(a) Heavy elements (b) Middle weight elements
(c) All elements (d) Light elements

40. A particle moves in the direction of east for 2 second with a velocity 15m/s. Then it moves towards north for 8 second with a velocity 5m/s. The average velocity of the particle is -

(a) 1 m/s (b) 5 m/s (c) 7 m/s (d) 10 m/s

41. Given B = magnetic induction and R = radius of the path, the energy of the charged particle coming out of a cyclotron is given by -

(a) $qB^2R^2/2m$ (b) $q^2BR^2/2m$ (c) $q^2B^2R/2m$ (d) $q^2B^2R^2/2m$

42. The fundamental frequency of an organ pipe, open at both ends, is 512 Hz. If it is closed at one end, its fundamental frequency will be -

(a) 512 (b) 1024 (c) 256 (d) 341

43. In a standing sound wave, the pressure variation is -

(a) Zero everywhere
(b) Same everywhere
(c) Maximum at nodes and zero at antinodes
(d) Zero at nodes and maximum at antinodes

44. A rod of length l is clamped at both ends as well as at the middle point. The lowest possible frequency of vibration (velocity of sound = v) is -

(a) v/l (b) $v/2l$ (c) $2v/l$ (d) $v/4l$

45. The equation of plane progressive wave is given by -

$$y = 10\sin 2\pi\left(\frac{t}{0.01} + \frac{x}{500}\right) \text{cm}$$

where x and y are expressed in cm and t in second. The velocity of wave propagation is -

(a) 0.5 m/s (b) 1.0 m/s (c) 5.0 m/s (d) 500 m/s

46. Two similar wires on a sonometer are tuned to unison. One wire is 25 cm long and is stretched by 100 gm weight. The length of the other wire which is stretched by 400 gm weight is -

(a) 6.25 cm (b) 12.5 cm (c) 50 cm (d) 100 cm

47. A stretched string of length L, tension T and linear density ρ is plucked in the middle and released. Its fundamental frequency is given by $n = \frac{1}{2L}\sqrt{\frac{T}{\rho}}$. This string when vibrating in different segments will give-

(a) Only a single frequency n

(b) Frequencies $n, 2n, 3n, 4n, \ldots\ldots$

(c) Frequencies $n/2, n/4, n/6, \ldots\ldots$

(d) Frequencies $n/3, n/5, n/7, \ldots\ldots$

48. For a van der Waal's gas, the critical temperature T_c is -

(a) $T_c = \frac{8a}{27Rb}$ (b) $T_c = \frac{a}{24Rb}$ (c) $T_c = \frac{27a}{8Rb}$ (d) $T_c = \frac{9a}{8Rb}$

49. The temperature of source in a Carnot engine is 127°C. It takes 500 calory of heat from the source and rejects 400 calory to the sink during each cycle. The temperature of the sink is

(a) 320 K (b) 273 K (c) 40 K (d) 50 K

50. One kilogram of ice melts at 0°C into water at the same temperature. The latent heat of ice in Cal/gm is 80. The change in entropy is (in Cal/K) -

(a) ∞ (b) 0 (c) 0.293 (d) 293

51. The resolving power of a circular aperture is -

(a) $\theta = 1.22\,(\lambda + d)$ (b) $\theta = \frac{1.22\,\lambda}{d}$

(c) $\theta = \frac{1.22\,d}{\lambda}$ (d) $\theta = \frac{1.22}{(\lambda+d)}$

52. The focal length of the objective lens and the eyepiece of a telescope is 100 cm and 10 cm respectively. T magnifying power of the telescope when the final image is formed at infinity, is -

(a) 0.1 (b) 10 (c) 100 (d) ∞

53. In Youngs double slit experiment, the slit separation $d = 10^{-3}$ m, separation of slit and screen D = 3.0 m and the fringe width was found to be 2.1×10^{-3} m. The color of light must be -

(a) Violet (b) Green (c) Yellow (d) Red

54. A spectral line of wavelength 5000Å coming from a distant galaxy is observed at 6000Å. The speed of galaxy is -

(a) 0.6×10^8 m/s receding (b) 0.6×10^8 m/s approaching

(c) 0.3×10^8 m/s receding (d) 0.3×10^8 m/s approaching

55. Newton's rings are fringes of -

(a) Equal inclination (b) Equal thickness

(c) Equal radii (d) Both equal inclination and equal thickness

56. A quarter wave plate is designed for 6000Å. If change in refractive index is negligible, phase retardation for 4500Å will be -

(a) $\pi/2$ (b) $2\pi/3$ (c) π (d) $\pi/3$

57. The resolving power of an electron microscope is $\lambda/0.04$. If the accelerating potential is 1000V, the resolving power is nearly -

(a) 1Å (b) 100Å (c) 10Å (d) 1000Å

58. A perfectly black body is radiating at T_1 K. Its radiation is to be increased to 16 times. What will be the temperature T_2 K for this ?

(a) $T_2 = 16T_1$ (b) $T_2 = 8T_1$ (c) $T_2 = 4T_1$ (d) $T_2 = 2T_1$

59. Heat transfer is fastest in -

(a) Conduction (b) Convection

(c) Radiation (d) Equally fast in all above

60. If K and σ, respectively, are the thermal and electrical conductivities of a metal at absolute temperature T, then -

(a) K/σ = Constant (b) $K/\sigma T$ = Constant

(c) K/T = Constant (d) $K\sigma/T$ = Constant

61. When an external force is not applied to the system, its total momentum -

(a) Becomes zero (b) Remains constant

(c) Increases gradually (d) Decreases gradually

62. Which is the type of inertia ?

(a) Inertia of rest (b) Inertia of motion

(c) Inertia of direction (d) All the above options

63. A geostationary satellite is revolving at a height of 6 R_e above the earth where R_e is the earth's radius. The period of revolution of a satellite circulating at a height of 2.5 R_e above the earth's surface will be given by (in hour) -

(a) 24 (b) 12 (c) 6 (d) $6\sqrt{2}$

64. The escape velocity of an object from the surface of the earth is (symbols have their usual meaning) -

(a) $\left(\frac{GM}{R^2}\right)^{1/2}$ (b) $\left(\frac{GM}{R}\right)^{1/2}$ (c) $\left(\frac{GR}{M}\right)^{1/2}$ (d) $\left(\frac{2GM}{R}\right)^{1/2}$

65. The zero-point energy of harmonic oscillator is -

(a) $\hbar\omega$ (b) $1/2\,\hbar\omega$ (c) $2\,\hbar\omega$ (d) $4\,\hbar\omega$

66. The energy of a particle in a box are given by -

(a) $\frac{n^2\pi^2\hbar^2}{2mL^2}$ (b) $\frac{\pi^2\hbar^2}{2mL^2n^2}$

(c) $\frac{n\hbar}{2\pi}$ (d) Continuous energy spectrum

67. In case of potential step of height V_0. If a particle of energy $E < V_0$ the transmittance is -

(a) Zero (b) Finite non-zero (c) Infinite (d) 1

68. In relation to quantum theory, which statement is incorrect ?

(a) The energy operator is $\frac{i\hbar}{2\pi}\frac{\partial}{\partial t}$

(b) Schrodinger equation is a postulate, it cannot be derived.

(c) For hydrogen atom, the orbital angular momentum is given by $\frac{lh}{2\pi}$

(d) A particle can penetrate a potential barrier greater than its kinetic energy

69. The duration of radar pulse is 10^{-6} *s*. The uncertainty in its energy would be -

(a) 0 (b) 1.05×10^{-35} J (c) 1.05×10^{-28} J (d) 1.05×10^{-21} J

70. The expression $|\psi(r,t)|^2$ stands for -

(a) Position

(b) Position probability density

(c) Normalization

(d) Time probability density

71. A stone is dropped from an airplane moving with a constant velocity. The path of the stone observed by the pilot is -

(a) Parabola (b) Hyperbola (c) Arc of the circle (d) Straight line

72. The coordinates of a moving particle at time t are given by -

$x = at^2, y = bt^2$

The speed of the particle is-

(a) $2(a+b)\,t$ (b) $2(a^2+b^2)^{1/2}\,t$ (c) $2(a^2+b^2)^2\,t$ (d) $(a+b)\,t$

73. In an elastic one-dimensional collision between two objects, the relative velocity of approach before the collision is -

(a) Greater than the relative velocity of separation after collision

(b) Less than the relative velocity of separation after collision

(c) Equal to the relative velocity of separation after collision

(d) Less than the relative velocity of separation if the incoming object is heavier than the target object

74. An object moves along a straight line path from P to Q under the action of a force $(4\hat{\imath} - 3\hat{\jmath} + 2\hat{k})$ N. If the coordinates of P and Q in meters are $(3, 2, -1)$ and $(2, -1, 4)$ respectively then the work done by the force is -

(a) +15J (b) −15J (c) 1015J (d) $\sqrt{35}(4\hat{\imath} - 3\hat{\jmath} + 2\hat{k})$J

75. For propagation of electromagnetic wave in free space, the conditions (in usual notations) which must be satisfied are -

(a) $E^2 = B^2$ and $\vec{E}.\vec{B} \neq 0$ (b) $E^2 = B^2$ and $\vec{E}.\vec{B} = 0$

(c) $E^2 \neq B^2$ and $\vec{E}.\vec{B} = 0$ (d) $E^2 \neq B^2$ and $\vec{E}.\vec{B} \neq 0$

76. The velocity of electromagnetic waves in a dielectric medium having permeability μ and permittivity ε is given by -

(a) $\frac{1}{\sqrt{\varepsilon\mu}}$ (b) $\sqrt{\frac{\varepsilon}{\mu}}$ (c) $\sqrt{\frac{\mu}{\varepsilon}}$ (d) $\sqrt{\varepsilon\mu}$

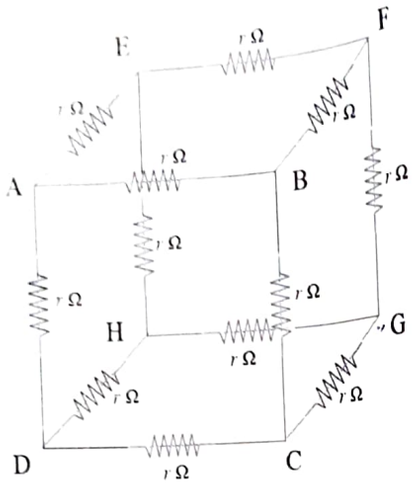
77. In electromagnetic wave if u_E and u_M are mean electric and magnetic energy densities respectively, then-

(a) $u_E = u_M$ (b) $u_E > u_M$ (c) $u_E < u_M$ (d) $u_{E^2} < u_{M^2}$

78. Two cells, each of e.m.f. E and internal resistance r, are connected in parallel across a resistance R. The power delivered to R is maximum when -

(a) $R = r$ (b) $R = r/2$ (c) $R = 2r$ (d) $R = 0$

79. Twelve resistance wires of $r\Omega$ resistance each are connected to form a Skelton cube as shown in the figure.



The equivalent resistance between two diagonally opposite corners of the cube will be -

(a) 6/5 r (b) 5/6 r (c) 3/4 r (d) 4/3 r

80. What is immaterial for an electric fuse wire ?

(a) Specific resistance of wire material

(b) Length of the wire

(c) Radius of wire

(d) Current flowing through the wire

81. The Fourier transform of a function $f(t)$ is given by -

(a) $\int_{-\infty}^{\infty} f(t)e^{-j\omega t}\,dt$ (b) $\int_{0}^{\infty} f(t)e^{st}\,dt$ (c) $\int_{-\infty}^{\infty} f(t)e^{j\omega t}\,dt$ (d) $\int_{0}^{\infty} f(t)e^{-j\omega t}\,dt$

82. Time period of revolution of a satellite is given by -

(a) $T=\sqrt{\frac{4\pi^2R^3}{GM}}$ (b) $T=\sqrt{\frac{4\pi R^3}{GM}}$ (c) $T=\sqrt{\frac{4\pi^2GM}{R}}$ (d) None of these

83. Young's modulus Y, bulk modulus B and rigidity co-efficient η are related as -

(a) $\frac{1}{\eta}=\frac{1}{3Y}+\frac{1}{9B}$ (b) $\frac{1}{3\eta}=\frac{1}{Y}-\frac{1}{9B}$ (c) $\frac{1}{9\eta}=\frac{1}{3B}+\frac{1}{Y}$ (d) $\frac{1}{B}=\frac{1}{3\eta}+\frac{1}{9Y}$

84. Inverse of the matrix $A = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$ is -

(a) $\begin{bmatrix} 7 & -3 & 3 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{bmatrix}$ (b) $\begin{bmatrix} 7 & -3 & -3 \\ -1 & 1 & 0 \\ -1 & 0 & 1 \end{bmatrix}$ (c) $\begin{bmatrix} -1 & 1 & -3 \\ -1 & 0 & 0 \\ 7 & -3 & 1 \end{bmatrix}$ (d) $\begin{bmatrix} -1 & -3 & 3 \\ -1 & 0 & 0 \\ 7 & 1 & 1 \end{bmatrix}$

85. The rank of the matrix $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 4 & 5 \end{bmatrix}$ is -

(a) 0 (b) 1 (c) 2 (d) 3

86. The value of the integral $I = \int_0^{2\pi} \frac{d\theta}{(5+4Cos\theta)}$ is -

(a) $\frac{8\pi}{27}$ (b) $\frac{10\pi}{27}$ (c) $\frac{8\pi}{25}$ (d) $\frac{10\pi}{49}$

87. The residue of $\frac{z^4}{(z-1)^4(z-2)(z-3)}$ at z = 1 is -

(a) 16/81 (b) 175/16 (c) 525/8 (d) 525/16

88. The residue of $\frac{z}{(z-a)(z-b)}$ at infinity is -

(a) $\frac{a}{b}$ (b) $-\frac{b}{a}$ (c) 1 (d) −1

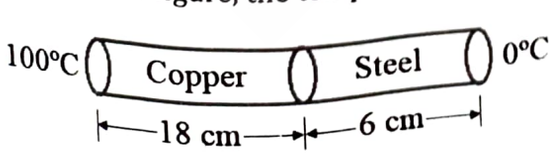
89. If $\vec{A} = \hat{\imath}x$ and $\vec{B} = \hat{\jmath}y$, then $\vec{\nabla}(\vec{A} \cdot \vec{B})$ is equal to -

(a) $\hat{\imath}x + \hat{\jmath}y$ (b) 0 (c) $\frac{1}{2}\hat{\imath}yx^2 + \frac{1}{2}\hat{\jmath}xy^2$ (d) 2

90. The condition that the vector $\vec{A}$ should be the gradient of a scalar function is -

(a) $\vec{\nabla}.\vec{A} = 0$ (b) $\vec{\nabla}\vec{A} = 0$ (c) $\vec{\nabla} \times \vec{A} = 0$ (d) $\vec{\nabla} \times \vec{A} - \nabla^2.\vec{A} = 0$

91. The co-efficient of thermal conductivity of copper is 9 times that of steel. In the composite cylindrical bar shown in the figure, the temperature of the junction in the steady state is -



(a) 75°C (b) 50°C (c) 33°C (d) 25°C

92. Lenz's law can explain the behavior of -

(a) Only paramagnetic materials

(b) Only diamagnetic materials

(c) Only ferromagnetic materials

(d) All magnetic materials

93. If a magnetic material produces magnetic field in opposite direction of the magnetizing field, it is -

(a) Paramagnetic (b) Diamagnetic (c) Ferromagnetic (d) Electromagnetic

94. A charge particle enters a uniform magnetic field with velocity v perpendicular to the direction of the field. Its time period -

(a) Increase with v

(b) Decreases with v

(c) Independent of v

(d) Depending on charge it may increase, decrease or independent of v

95. A proton moving with velocity v is acted upon by electric field E and magnetic field B. The proton will move undeflected if -

(a) E is perpendicular to B

(b) E is parallel to v and perpendicular to B

(c) E, B and v are mutually perpendicular and $v = E/B$

(d) E and B are both parallel to v

96. A beam of well collimated cathode rays travelling with a speed of 5×10^6 m/s enter a region of mutually perpendicular electric and magnetic fields and emerges undeviated from this region. If $|B| = 0.02T$, the magnitude of the electric field is -

(a) $10^5\ Vm^{-1}$ (b) $2.5 \times 10^8\ Vm^{-1}$ (c) $1.25 \times 10^{10}\ Vm^{-1}$ (d) $2.0 \times 10^3\ Vm^{-1}$

97. The magnetic susceptibility of a substance is negative. The substance is -

(a) Paramagnetic

(b) Diamagnetic

(c) Ferromagnetic

(d) Non-magnetic

98. A current I_0 passes through a solenoid of length L having N number of turns when it is connected to a d.c. source. A charged particle with charge q is projected along the axis of the solenoid with a speed v_0. The velocity of the particle in the solenoid is ?

(a) Increases

(b) Decreases

(c) Remains unchanged

(d) Becomes zero

99. When a coil carrying electric current is placed in a uniform magnetic field ?

(a) Torque is formed
(b) *e.m.f* is induced
(c) Both (a) and (b) are correct
(d) None of the above

100. An electron with charge q coulomb moves with a velocity v m/s in the same direction as that of the magnetic field B weber/m^2. The force exerted on the electron by the field is -

(a) qvB Newton in the direction of the magnetic field
(b) qvB Dyne in the direction of the magnetic field
(c) qvB Newton at the right angle to the magnetic field
(d) Zero

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