PHYSICS

BOOKS - UNITED BOOK HOUSE

MODEL PAPER SET-13

Exercise

1. What is the unit of surface charge Density in SI systems:

A. C

B. C/m

C. C/m^2

D. C/m^3

Answer:

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2. A resistance of 12Ω is connected with a battery of emf 1.5volt to have 0.1A current. What is the intemal resistahce of the battery?

A. 1Ω

B. 3Ω

C. 5Ω

D. 15Ω

Answer:

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3. What is the number of electrons in $1C$

charge?

A. 6.25×10^{17}

B. 6.25×10^{18}

C. 6.25×10^{19}

D. 1.6×10^{19}

Answer:

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4. How does a galvanometer is converted into an ammeter?

A. Small resistance in series

B. Large resistancein series

C. Small resistance in Parallel

D. Largeiesistance in parallel.

Answer:

5. A rod of length L and magnetic-moment M is bent to form a semicircular shape.What will be the new magnetic moment?

A. M

B. $2\dfrac{M}{\pi}$

C. $\dfrac{M}{\pi}$

D. $M\pi$

Answer:

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6. The self inductance of a long solenoids L. Another solenoid is' taken which has length diameter and no of turns double that of the

previous one. What will be the self inductance

of the new solenoid:

A. 2L

B. 4L

C. 8L

D. 16L

Answer:

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7. What is the condition for wattless current?

A. L=0

B. C=0

C. R=0

D. L=C

Answer:

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8. The velocity of light in a medium is $2 \times 10^8 m/s$. What will be the refractive index of the medium?

    A. 1.4

    B. 2.3

    C. 1.5

    D. 1

Answer:

9. A telescope is such that the power of its two lenses be 0.5D and 20D respectively. What will be the magnifying power of that lens? —

A. 8

B. 20

C. 30

D. 40

Answer:

10. What is the momentum of a photon of frequency γ and wavelength λ ?

A. $\dfrac{h\gamma}{c}$

B. $\dfrac{h\lambda}{c}$

C. $\dfrac{h\gamma}{\lambda}$

D. 0

Answer:

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11. What is the velocity of electrons in'the first Bohr Orbit of Hydrogen atom:

A. $3 \times 10^8 m/s$

B. $2.19 \times 10^6 m/s$

C. $3 \times 10^7 m/s$

D. $2.19 \times 10^7 m/s$

Answer:

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12. What is the unit of μ_0 (free space permeability)?

13. Is it possible for a static charge to produce a magnetic field?

14. A coil of metal wire is stationary in a non-uniform magnetic field. Is an e.m.f. Induced in the coil? Give reason.

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15. What is the power and focal length- of a parallel glass slab?

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16. A person uses glass of power $' + 2D$. He is suffering from-

17. What is the condictivity a semiconductor at absolute zero.

18. The magnetic field at the centre of a loop of radius carrying current I is B_1 .The magnctic field at a distance from the long straight current canying wire is B_2. Compare B_1 & B_2.

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19. Arrange the following in the ascending order of the wave lengths— X-ray,visible light, and infra-red.

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20. The Ground state energy for Hydrogen atom is $-13.6eV$:What will be the energy require to Shift that e^- to the first excited state?

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21. What will be the height of the antena to transmit the TV signal to a distance of 32km[R=6400Km]

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22. An object has charge of$80 \mu c$. What is the number of excess electrons in the conductor?

23. What is the total amount of work to rotate a charge in the static electric field over a circular path? The potential at any point is given by $V = 5x + 3y + \sqrt{15}z$.

24. Wb/m^2 isthe unit of which physical Quantity?

25. The angle of minimum deviation for any prism $(A = 60°)$ is $30°$. If the velocity of light in vaccuum be $3 \times 10^8 m/s$ then what will be its value in the prism?

26. What is the relation between path difference and phase difference?

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27. The resistance of a wire is 5Ω. It is streached to increase length by 20%. If the volume is unaltered, then what is the final resistance.

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28. Show that the equivalent resistance in parallel combination is less than each of the resistances. The main Voltage for a house is 220V, the fuse is of 5A, What Will be the maximum number of 60Watt bulb that can be switched or together?

29. The flux through a conductor vary maintaining the-equation $\phi = \left(4t^2 + 2t - 5\right)$

wb, where t = sec and the resistance of the coil

is 5Ω. What is the induced current after 2sec?