PHYSICS

BOOKS - PUNJAB BOARD PREVIOUS YEAR PAPERS

MODEL PAPER 2021

Mcq

1. Potentail at any point inside a charged hollow sphere

A. increase with distance

B. is a constant

C. decreases with distance from center

D. is zero

Answer:

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2. Charging without actual contact is called:

A. Charging by friction

B. charging by conduction

C. charging by induction

D. none of above

Answer:

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3. The drift velocity does not depend upon:

A. Cross-section of the wire

B. length of the wire

C. number of free electrons

D. magnitude of the current

Answer:

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4. The specific resistance of a condutor increases with

A. Increase in temp.

B. increase in area of cross section

C. decrease in length

D. decrease in area of cross section

Answer:

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5. The ultimate individual unit of magnetism in any magnet is called:

A. North pole

B. South pole

C. Dipole

D. Quadrupole

Answer:

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6. A charged particle moving in a magnetic field experiences a resultant force:

A. In the direction of field

B. In the direction opposite to the field

C. In the direction perpendicular to both the field and its velocity

D. None of the above

Answer:

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7. In an a.c. series circuit, the instantaneous current is maximum when the instantaneous voltage is maximum. The circuit element connected to the source is:

A. Pure resistor

B. pure inductor

C. pure capacitor

D. none of these

Answer:

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8. The equivalent quantity of mass in electricity is:

A. Current

B. self-inductance

C. potential

D. charge

Answer:

9. Electromagnetic waves are transverse in nature is evident by

A. Polarization

B. Interference

C. Reflection

D. Diffraction

Answer:

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10. The velocity of electromagnetic wave is parallel to

A. $\overrightarrow{B} \times \overrightarrow{E}$

B. $\overrightarrow{E} \times \overrightarrow{B}$

C. $\overrightarrow{E}$

D. $\overrightarrow{B}$

Answer:

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11. The speed of electromagnetic wave in a medium of dielectric constant 2.25 and relative permeability 4 is

A. $1 \times 10^8 m/s$

B. $2.5 \times 10^8 m/s$

C. $2 \times 10^8 m/s$

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

Answer:

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12. If a coil of metal is kept stationary in a non-uniform magnetic field, then

A. An emf is induced in the coil

B. A current is induced in the coil

C. Neither emf nor current is induced

D. Both emf and current is induced

Answer:

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13. The induced emf in a coil is proportional to

A. Magnetic flux through the coil

B. Area of the coil

C. Rate of change of magnetic flux through the coil

D. Product of magnetic flux and area of the coil

Answer:

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14. In a circuit, the current lags behind the voltage by a phse difference of $\pi/2$. The circuit contains which of the following?

A. Only R

B. Only C

C. Only L

D. R and C

Answer:

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15. A step-up transformer is used on a 120 V line to provide a potential difference of 2400 V. If the primary coil has 75 turns, the number of turns in the secondary coil is

A. 150

B. 1500

C. 1200

D. 1575

Answer:

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16. For protecting a sensitive equipment form external magnetic field, it should be

A. Wood

B. iron

C. ebonite

D. diamagnetic substance

Answer:

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17. A charged particle enters at 30° to the magnetic field. Its path becomes:

A. Circular

B. elliptical

C. helical

D. straight line

Answer:

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18. The unit of electric field is not equivalent to

A. $\frac{N}{C}$

B. $\frac{J}{C}$

C. $\frac{V}{m}$

D. $\frac{J}{Cm}$

Answer:

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19. If the surface charge density of charge be σ electric field near the surface would be:

A. $\frac{2\sigma}{\varepsilon_0}$

B. $\frac{3\sigma}{2\varepsilon_0}$

C. $\frac{\sigma}{2\varepsilon_0}$

D. $\frac{\sigma}{\varepsilon_0}$

Answer:

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20. Work done in moving a unit positive charge through a distance of x meter on an equipotential surface is

A. x joule

B. $1/x$ joule

C. zero

D. x^2 joule

Answer:

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21. The electric field at a point at distance r from the center of electric dipole lying on the axial line is proportional to

A. $\frac{1}{r}$

B. $\frac{1}{r^2}$

C. $\frac{1}{r^3}$

D. $\frac{1}{r^4}$

Answer:

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22. When a wire is stretched and its radius becomes $\frac{r}{2}$ then its resistance will be:

A. 16 R

B. 4 R

C. 2 R

D. $\frac{R}{2}$

Answer:

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23. Kirchhoff's rules I and II prove the law of

A. Conservation of charge and energy

B. Conservation of current and energy

C. Conservation of mass and charge

D. Conservation of mass and energy

Answer:

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24. A magnetic field can be produced by

A. A moving charge

B. change in electric field

C. none of these

D. both (a) and (b)

Answer:

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25. Is there a magnetic force exerted by a magnetic field on a stationary electric charge?

A. Electric dipole

B. magnetic dipole

C. current loop

D. current carrying conductor

Answer:

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26. In a charged capacitor, the energy resides

A. On the positive plate

B. On both the positive & negative charged plates

C. In the field between the plates

D. Around the edge of the capacitor plates

Answer:

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27. What is the angle between the electric dipole moment and the electric field strength due to it on the equitorial line?

A. 0°

B. 90°

C. 180°

D. 270°

Answer:

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28. An electric dipole with dipole moment 4×10 ^−9 C m is aligned at 30^∘ with the direction of a uniform electric field of magnitude 5×10

^4 N/C. Calculate the magnitude of the torque acting on the dipole.

A. 1×10^{-4}Nm

B. 2×10^{-4} Nm

C. 4×10^{-4} Nm

D. 3×10^{-4} Nm

Answer:

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29. The no. of electric lines of force radiating from a closed surface in vacuum is 1.13×10^{11} . The charge enclosed by the surface is :

A. 1 C

B. $1\mu C$

C. 0.1 C

D. $0.1\mu C$

Answer:

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30. The sensitivity of the potentiometer can be increased by

A. Increasing the emf of the cell

B. Increasing the length of the potentiometer wire

C. Deceasing the length of the potentiometer wire

D. None of the above

Answer:

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31. A wire has a resistance of 10.5Ω at $21^\circ C$ and 16.4Ω at $147^\circ C$. The value of temperature coefficient of resistance is

A. $0.0435^\circ C^{-1}$

B. $0.000525^\circ C^{-1}$

C. $0.0044^\circ C^{-1}$

D. $0.00287^\circ C^{-1}$

Answer:

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32. When an electron is placed in magnetic field, the velocity of electron:

A. Increases

B. depends on the field strength

C. decreases

D. independent of field strength

Answer:

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33. A charge q is moving in a magnetic field, then the magnetic force does not depend upon

A. Charge

B. mass

C. velocity

D. magnetic field

Answer:

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34. A galvanometer of resistance 15 Ω gives a full scale deflection of current of 2mA. The shunt resistance needed to convert it into an ammeter of range 5 A is

A. 0.006Ω

B. 0.0078Ω

C. 0.002Ω

D. 1.02Ω

Answer:

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35. An electron moving with a speed of 10^8 m/s enters a magnetic field of 5×10^{-3} T in a direction of perpendicular to field. Then the radius of the path will be

A. 1.2 m

B. 0.43 m

C. 0.113 m

D. 0.54 m

Answer:

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