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HSEIIRKON17

15318-A

PHYSICS

(Long Answer Type Questions)

1. Derive an expression for the torque experienced by an electric dipole placed in a uniform electric field. What is the net force acting on this electric dipole?

Or

Define capacitance of a capacitor. Give its S.I. Unit. Derive an expression for the electrostatic energy stored in a charged capacitor.

2. What are dia, para and feromagnetic materials ? Discuss their important properties.

Or

Describe the principle, construction and working of moving coil galvanometer.

3. Derive an expression for average Power in LCR series circuit connected to A. C. Supply. Hence define Povher factor.

Or

Give the principle, construction, theory and working of A. c. generator

4. State Huygen's principle and prove the laws of reflection on its basis.

Or

With the help of a ray diagram, explain the working of a compound microscope. Derive an expression for its maghifying power.

(Short Answer Type Questions)

5. What is meant by equipotential surface ? Give two properties of equipotential surface.

6. Establish the relation between drift velocity of electrons and electric current.

7. A 220 V-100 Watt bulb is connected to 100 V source. Calculate the power consumed by the bulb.

8. How will you convert galvanometer into Voheter?

9. Write characteristics of electromagnetic waves,

10. State and explain Brewster's law of Polarization.

11. Calculate the speed of light in a medium whose critical angle is 30°.

12. Explain with the help of a circuit diagram how a zener diode can be used as a voltage regulator.

(Very Short Answer type Questions)

13. Find the capacitive reactance of 1 o μf capacitor when it is a part of a circuit whose frequency is 100 Hz. https://www.jkboseonline.com

14. Define modulation. What are the elements of basic communication system?

15. Why does sun look blue ? Explain

16. Why the sky waves are not d in the transmission of TV Signal ?

17. Explain the term stopping potential and threshold frequency.

18. Explain mass defect.

19. Define half-life and average life of a radioactive substance.

20. Give Boolean expression and truth table of NOR gate.

(Objective Type Questions)

21. (i) What is demodulation ?

(ii) Define Isotones.

(iii) At what temperature would an intrinsic semiconductor behaves like a perfect insulator?

(iv) The deviation through a glass prism is minimum when .....

(v) De-Broglie waves are associated with a moving particle irrespective of .....

Choose the correct one:

(vi) Conductivity of a superconductor is :

(a) Infinite (b) Very large (c) Very small (d) Zero

(vii) law is a consequence of the law of conservation of:

(a) Charge (b) Mass (c) Momentum (d) Energy

(viii) The magnitude of Saturation of Phon-electric current depends upon :

(a) Frequency (b) Intensity (e) Work function (d) Stopping potential

(ix) The radius of copper nucleus is of the order of:

(a) 10^{-16}m (b) 10^{-14}m (c) 10^{-12}m (d) 10^{-9}m

(x) An oscillator is nothing but amplifier with:

(a) Positive feed back (b) Negative feed

(c) No feed back (d) Large gain