

IMSTUTORIAL.IN
Model guess paper-1 - March - 2019
INTERMEDIATE II -YEAR telengana
PHYSICS - II

Time: 3hours

Max.Marks:60

INSTRUCTIONS:

1. Q.Nos: 1 - 10 are Very Short Answer Type. Each question carries 2 marks.
2. Q. Nos: 11 - 18 are Short Answer Type. Each question carries 4 marks.
3. Q.Nos: 19 - 21 are Long Answer Type. Each question carries 7 marks.

I. Answer ALL questions in 2 or 3 lines each. [10 x 2 = 20]

1. A small angled prism of 4° deviates a ray through 2.48° . Find the refractive index of prism.
2. Define magnetic declination.
3. Give two uses of Infrared rays?
4. What are Eddy currents?
5. What type of transformer is used in a 6V bed lamp?
6. What is photoelectric effect?
7. The radius of the first electron orbit of a hydrogen atom is 5.3×10^{-11} m. What is the radius of second orbit?
8. Classify the following materials with regard to Magnetism, Manganese, Cobalt, Nickel, Bismuth, Oxygen, Copper.
9. Draw the circuit symbols for p - n - p, n - p - n transistors.
10. Define modulation. What is it necessary?

II. Answer any SIX of the following questions in about 75 words each. [6 x 4 = 24]

11. With a neat labelled diagram explain the formation of image in a simple microscope?
12. Discuss the intensity of transmitted light when a polaroid sheet is rotated between two crossed polaroids?
13. Explain series combination of capacitors. Derive the formula for equivalent capacitance in series combination.
14. State Kirchoff's law for an electrical net work. Using these laws deduce the condition for balance in a wheatstone bridge.
15. Current in a circuit falls from 5A to 0A in 0.1s. If an average emf of 200V induced give an estimate of the self inductance of the circuit.
16. State the principle on which a transformer works. Describe the working of a transformer with necessary theory.
17. Derive an expression for potential and kinetic energy of an electron in any orbit of an hydrogen atom according to Bohr's atomic model. How does PE changes with increasing 'n'.
18. Describe how a semi conductor diode is used as a half wave rectifier?

III. Answer any TWO of the following questions in about 300 words each. [2 x 8 = 16]

19. Explain the formation of stationary waves in stretched string and hence deduce the laws of transverse waves in stretched strings?
A steel wire 0.72m long has a mass 5×10^{-2} kg. If the wire is under a tension of 60N. What is the speed of transverse waves on the wire?
20. Obtain an expression for the torque on a current carrying loop placed in a uniform magnetic field. Describe the construction and working of a moving coil galvanometer.
21. Explain the principle and working of a nuclear reactor with the help of a labelled diagram? If one

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microgram of ${}_{92}^{235}\text{U}$ is completely destroyed in an atom bomb, how much energy will be released.