

MODEL QUESTION PAPER
PHYSICS – Paper II

Time : 3 Hours

Max Marks : 60

Section – A

(Very short Answer type)

10x2=20 Marks

- i) Answer all questions.
- ii) Each question carries 2 marks.

1. What is Doppler Effect ? Mention any two of its applications.
2. Why is 'Red Light' used in danger signal ?
3. Which phenomenon of light establishes its transverse nature of vibrations ?
4. Define Magnetic permeability of a magnetic material Mention S.I. unit of relative Magnetic permeability ?
5. Explain why electric lines of force do not intersect ?
6. Why the internal resistance of a voltmeter is very high ?
7. Give the principle on which a transformer works Mention the use of a transformer?
8. What do you understand by the Dual nature of matter ?
9. What is 'mass defect' ? How is it related to the binding energy of a nucleus ?
10. What is meant by 'Forward Biasing' of a p-n junction diode ? Give the figure.

Section – B

(Short Answer Type)

6 x 4 = 24 marks

- i) Answer any SIX of the following Questions.
 - ii) Each Question carries 4 marks.

11.
 - a) Explain the phenomenon of ‘Beats’ Two tuning forks give 4 beats per second when sounded simultaneously. The frequency of one of the tuning forks is 384 Hz.
 - b) When the other fork is loaded with wax, six beats per second are produced. What is the frequency of the second fork ?
12. Draw the diagram of a Ramsden eyepiece and explain its working.
13. How do you account for the appearance of bright and dark bands in the Young’s Double Slit experiment ? Give the relevant formulae.
14. How are the magnetic moments of two short bar magnets compared by equal distance method in Tan A position ? Two bar magnets are arranged one after the other in Tan A position at equal distances. If they produced deflections of 30° and 60° with the needle, find the ratio of their magnetic moments.
15. Three capacitors of capacitance $2 \mu\text{F}$, $4 \mu\text{F}$ and $6 \mu\text{F}$ are connected in parallel and a p.d. of 12 v is applied calculate the charge on each capacitor.
16. Explain how a moving coil galvanometer can be converted into
(a) a Voltmeter and (b) an Ammeter.
17. What is Mosley’s law ? Explain briefly its importance.
18. What is Nuclear Fission ? How is it different from Nuclear Fusion ?

Section – C

(Eassy Type Question)

2 x 8 = 16 Marks

- i) Answer any TWO of the following Questions.
- ii) All Questions carry 8 marks each.

19. a) Discuss the origin and properties of different kinds of Spectra ?
(6)
- b) Explain Fraunhofer Lines on the basis of Buuseu-Kirchoff Principle
(2)
20. a) Explain, with the help of a diagram, the principle of Wheatstone's Bridge.
(2)
- b) Describe how it is used to determine the specific resistance of the material of the given wire.
(4)
- c) A known resistance of 15Ω is connected in the left gap and an unknown resistance in the right gap of a Metre - Bridge. When the bridge is balanced, balancing length is found to be 60 cm. Find the unknown resistance.
(2)
21. a) Explain the principle of Transistor
(2)
- b) Describe how a transistor can be used as an amplifier (common emitter mode)
(4)
- c) Calculate the current amplification factor (β) when change in collector current is 0.5 mA for a change in base current of 10 μ A
(2)