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 turning 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 ìF, 4 ìF and 6 ìF 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

        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 15 Ω 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 m A for a change in base current of 10 μ (2)

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