Roll No.....

21258

B. Sc. (Hons.) Mathematics 2nd Semester Examination – May, 2019

PHYSICS-II

Paper : BHM 126 Opt. ii

Time : Three hours] *[Maximum Marks : 60*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : There are ***eight*** questions in all. Question no. 1 is ***compulsory***. Out of Remaining ***Seven*** Question ***five*** questions have to be answered, selecting at least ***one*** question from each Unit.

Compulsory Question :

1. (a) A pn junction diode has a small forward resistance and a large reverse resistance why. 2

   (b) What are values of ripple factors for half and full wave rectifiers ? What information do we obtain from their comparison ? 2

P. T. O.

   (c) In a transistor base is made very thin and it is very lightly doped. Why ? 2

   (d) What are the disadvantages of negative feedback in amplifier. 2

   (e) Define spatial and temporal colerence in lasers. 2

UNIT – I

2. What is a solar cell ? Discuss its construction, working , I. V. characteristics and uses of a solar cell. 10

3. (a) Explain the working of a full wave rectidier. Find the expression for its efficiency and ripple factor. https://www.haryanapapers.com 6

   (b) A half wave rectifics uses a transformer of turns ratio 5 : 1 and the loan resistance is 500. If the primary voltage is 220 V find : (i) d.c. output voltage (ii) peak invease voltage. 4

4. Draw a circuit and describe the method to obtain characteristics of a pnp transistor in CB configuration. 10

UNIT – II

5. Draw a circuit of two stage R-C coupled amplifier. Explain the action and discuss its frequency response. 10

6. (a) Draw a circuit for voltage divides biasing transistor. Explain its working for stabilization.

   (b) What are the advantages of negative feedback amplifier ?

UNIT – III

7. Explain the principle, construction and working RUBY laser.

8. Explain in detail the following properties of laser.

   (a) Directionality

   (b) Light intensity

   (c) high degree of cohrence