Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

PH-110-CBCS

B.E. I & II Semester

Examination, June 2020

Choice Based Credit System (CBCS)

Physics

Time : Three Hours

Maximum Marks : 60

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Define the gradient of a Scalar field.
   b) State and prove the Gauss's Divergence theorem.

2. a) Define black body radiation.
   b) Explain the formation of discrete energy levels by analysing particle in a box.

3. a) Establish relation between Einstein A and B coefficients. Also give the importance.
   b) Explain Ruby laser in details.

4. a) Explain 'hall effect'. Derive the expression for hall coefficient.
   b) Draw the V-I characteristics of photodiode in forward and reverse bias.

5. a) Explain working of a He-Ne laser.
   b) Discuss Maxwell's equations.

6. Discuss Compton Effect.

OR

Explain Young's double slit experiment.

7. a) Define Numerical aperture.
   b) Explain the fiber optic communication system with block diagram.

8. Write short notes on : (Any two)
   a) Nuclear fission
   b) Photovoltaic cell
   c) Uncertainty principle.

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