Code No: 152AE **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year II Semester Examinations, September/October - 2021
APPLIED PHYSICS
(Common to EEE, CSE, IT, CSIT, ITE, CE(SE), CSE(CS), CSE(DS), CSE(Networks))

Time: 3 Hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
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1.a) In detail describe Photoelectric effect.
b) Discuss Heisenberg's Uncertainty principle. [7+8]

2.a) Write a note on Carrier generation and recombination.
b) Explain Photo-electric effect and Compton Effect in detail. [7+8]

3.a) Describe formation of depletion region in p-n junction diode.
b) Explain operation of principle of BJT.
c) What are the applications of p-n junction diode? [6+6+3]

4. Explain about Zener diode with its characteristics. [15]

5. What is Lasing action? Explain in detail. Discuss construction and working of semiconductor lasers with diagram. [15]

6. With suitable diagram explain construction and working principle of He-Ne laser system. [15]

7.a) What are losses associated with optical fibers? Explain in detail.
b) What is "total internal reflection"? Discuss about applications of Optical fibers. [7+8]

8. Discuss in detail about "Hysteresis loop". Mention some of the applications of magnetic materials. [15]

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