

[Total No. of Questions: 02 ]

[Total No. of Printed Pages: 01]

## LNCT UNIVERSITY, BHOPAL

Enrolment No. ....

CS-201 UC

B.TECH(CS/AIIML) I & II SEMESTER

EXAMINATION [JULY-2024]

ADVANCED PHYSICS & SUSTAINABLE ENVIRONMENT

Maximum Marks: 70

Time Allowed: 3Hours

Note:- Attempt all questions internal choice are given.

### (SECTION -A)

#### 1. Short Answer Type Questions (Attempt Any Five) [5x6=30]

- i. What do you mean by Barrier energy in PN junction diode.
- ii. Write down five applications of laser.
- iii. Discuss in brief about acceptance cone.
- iv. Discuss in brief about nano-materials.
- v. What is acid rain. Discuss in brief.
- vi. What do you mean by Irrotational field.
- vii. How does Fermi level affect if we introduced a pentavalent impurity in an Intrinsic semiconductor.

### (SECTION -B)

#### 2. Long Answer Type Questions (Attempt Any Four) [04x10=40]

- i. Discuss Hall effect. Derive an expression for hall coefficient.
- ii. Derive an expression for Energy & Momentum operator.
- iii. Establish the relation between Einstein A & B coefficient.
- iv. Discuss in detail about Newton Ring experiment with its application.
- v. Discuss in detail about nano materials, its characteristics and its applications.
- vi. What do you mean by environmental ethics. Discuss about issues and possible solutions.