647510 **BSCphMJ208x-4C** **Seat No :_____**

B.Sc. Semester - 4 (NEP-2020) Examination

March/April-2025

PHY: Fundamentals of Semiconductor Device (Major-8)

Time: 2:00 Hours **Marks: 50**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que-1 Answer the following questions. (Any two). (10)

1. Write a note on Light Emitting Diode.
2. Write a note on Tunnel Diode.
3. Write a note on Shockley Diode.

Que-2 Answer the following questions. (Any two). (10)

1. Write a note on conduction in a Gas.
2. Applications of Glow Tubes.
3. Write a note on Hot-Cathode Gas Diode.

Que-3 Answer the following questions. (Any two). (10)

1. Explain working of solar cell with diagram.
2. Explain characteristics of UJT.
3. write a note on Principle and working of JFET.

Que-4 Answer the following questions. (Any two). (10)

1. Explain De Morgan's theorem.
2. Explain NAND as universal gate.
3. Write note on advantages and disadvantages of digital electronics.

Que-5 Answer the following questions. (Any five). (10)

1. Write two applications of Photodiode.
2. Explain seven segment display.
3. Draw a graph of characteristics of Cold-Cathode Diode.
4. Applications of Thyratron.
5. Draw structure and symbol of UJT.
6. What is difference between JFET and BJT.
7. solve: (i) $\bar{A}$ + A = _____. (ii) $\bar{B}$.B = _____.
8. Give truth table for XOR gate.

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