1903000202030091
EXAMINATION FEBRUARY-MARCH 2024
BACHELOR OF SCIENCE (SECOND SEMESTER)
ELECTRONICS PAPER - I

[**Time: As Per Schedule]** **[Max. Marks: 50]**

Instructions:
1. Fill up strictly the following details on your answer book
   a) Name of the Examination : **BACHELOR OF SCIENCE (SECOND SEMESTER)**
   b) Name of the Subject : **ELECTRONICS PAPER - I**
   c) Subject Code No : **1903000202030091**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.
5. All symbols and abbreviations have their usual meaning.
6. Non-programmable calculators are allowed.
7. Assume data if necessary.

Seat No:

Student's Signature

Q.1 Answer in short: **8**

(a) What is barrier potential?

(b) Define: Valance electrons

(c) What is the value of intrinsic stand – off ratio (η) of the UJT?

(d) What is Dopping?

Q.2 (a) What is semiconductor? Distinguish between intrinsic & extrinsic semiconductor. Draw the energy band diagrams of intrinsic semiconductor. **10**

(b) Why is silicon preferred to germanium in the manufacture of diode? **4**

OR

(a) Explain the term: **10**

(i) Breakdown voltage
(ii) Knee voltage
(iii) Maximum forward current
(iv) Peak inverse voltage
(v) Maximum power rating

(b) Compare the V-I characteristics of Silicon and Germanium diodes. **4**

Q.3 (a) Discuss the BJT current components. Why the width of the base in a BJT kept very narrow. Why is the collector region of BJT very large? **10**

(b) In how many ways a transistor can be connected in a circuit? **4**

OR

(a) Discuss the construction and working of FET. **10**

(b) What is difference between FET and BJT? **4**

Q4 Write short note on (Any TWO) **14**

(a) N-type semiconductor

(b) Enhancement mode MOSFET

(c) Photo-transistor

(d) DC load line for transistor

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