



RAN - 1903000202030091 - CS

RAN-1903000202030091-CS

F.Y.B.Sc. (Sem. II) Examination April - 2023

Electronics Paper - I
Semiconductor Devices

[Total Marks: 50

सूचना : / Instructions

(१)

नीचे दृशविवेक निशानीवाणी विगतो उत्तरवली पर अवश्य लपववी.
Fill up strictly the details of signs on your answer book

Name of the Examination:

F.Y.B.Sc. (Sem. II)

Name of the Subject :

Electronics Paper - I Semiconductor Devices

Subject Code No.: 1903000202030091-CS

Seat No.:

--	--	--	--	--	--

Student's Signature

- (2) Figure on the right indicates full marks.
- (3) All symbols and abbreviations have their usual meaning.
- (4) Non-programmable calculators are allowed.
- (5) Assume data if necessary.

Q. 1 Answer in short:

08

- (a) In how many ways a transistor can be connected in a circuit?
- (b) Draw the equivalent circuit of UJT.
- (c) Define : amplitude
- (d) Why transistor is called a bipolar device?

Q. 2 (a) Draw and explain common emitter input and output characteristics of transistor.

10

- (b) A transistor has typical value of β is 200. The collector current is 20mA. The collector to base leakage current is $5\mu A$. Find the base current and emitter current.

04

OR

- Q. 2** (a) Discuss the construction and working of FET. **10**
(b) State the advantages and disadvantages of FET over BJT. **04**
- Q. 3** (a) Give full form of MOSFET. Discuss the construction and working of MOSFET. **10**
(b) What care must be taken while handling MOSFET? Why? **04**
- OR**
- Q. 3** (a) Explain the principle of operation and the V-I characteristics of a photo-transistor. **10**
(b) Compare photodiode and LED. **04**
- Q. 4** **Write short note on (Any TWO)** **14**
(a) Transistor as a switch
(b) Clipper Circuits
(c) Depletion mode MOSFET
(d) Voltage doubler circuit
-