



RAN - 1903000202030091

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

March / April - 2019

Electronics : Paper-I (Semiconductor Devices)

[Total Marks: 50

सूचना : / Instructions

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

Seat No.:

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Student's Signature

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

Q. 1 Answer in short:

08

1. What are the basic conditions for the proper functioning of a transistor?
2. Define :Pinch-off voltage
3. Define: RMS value
4. Enlist the different types of AC waveforms.

Q. 2 (a) In how many ways a transistor can be connected in a circuit? Which transistor connection is commonly used and Why?

10

(b) Derive: $1 - \alpha = 1/(1 + \beta)$

04

OR

(a) Explain the principle of operation and the V-I characteristics of a photo-transistor.

10

(b) Give some applications of photo-transistor.

04

- Q.3** (a) Explain the construction and working of a UJT. **10**
(b) The intrinsic stand-off ratio for a silicon UJT is determined to be 0.63. **04**
If the inter-base resistance is $10\text{K}\Omega$, what are the values of R_{B1} and R_{B2} ?

OR

- (a) Give full form of LED. Discuss the construction and working of LED. **10**
(b) Give some applications of LED. **04**

Q.4 **Write short note on (Any TWO)** **14**

- (a) Clamper circuit
(b) N-channel JFET
(c) Voltage doubler circuit
(d) Depletion mode MOSFET
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