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**Date: 29-01-2021.**

**II.B.TECH- I-SEM (R22)-I MID Examinations-November-2023 Date: 21/11/2023**

**Subject: ADE Time*:* 10:00 TO 12:00**

**Branch: IT & CSM Marks: 30 M**

***Answer all Questions in Part -A & Answer any FOUR Questions in Part -B***

**PART-A 5x2=10 M**

1. Explain the V-I characteristics of diode . **CO.1 [BTL-2]**
2. Explain operation of thermal runaway. **CO.2 [BTL-2]**
3. What are the different types of operating region in transistor. **CO.2 [BTL-1]**
4. Define diode and Draw any four symbols of diode? **CO.2 [BTL-1]**
5. Write short notes on N-channel JFET? **CO.1 [BTL-2]**

**PART-B 4X5=20 M**

1. Explain the operation of Full Wave Rectifier with its efficiency. **CO.2 [BTL-2]**

1. Explain the operation of zener diode and avalanche diode? **CO.2 [BTL-2]**

8 Explain the different types of clipping circuits. **CO.2 [BTL-2]**

9. Comparison of CB, CC and CE configurations? **CO.2 [BTL-2]**

1. Derive the relation between   α**,** β, γ **CO.1 [BTL-3]**

Explain the operation of Multistage CE amplifier circuit? **CO.3 [BTL-2** ]

SCHEME OF EVALUATION

PART-A

|  |  |  |  |
| --- | --- | --- | --- |
| S NO | THEORY | MARKS | TOTAL |
| 1 | Explain the V-I characteristics of diode | 2 | 2 |
| 2 | Explain operation of thermal runaway. | 2 | 2 |
| 3 | What are the different types of operating region in transistor. | 2 | 2 |
| 4 | Define diode and Draw any four symbols of diode? | 2 | 2 |
| 5 | Write short notes on N-channel JFET? | 2 | 2 |

PART-B

|  |  |  |  |
| --- | --- | --- | --- |
| S NO | THEORY | MARKS | TOTAL |
| 6 | Explain the operation of Full Wave Rectifier with its efficiency.  (or) | 5 | 5 |
| 7 | a)Explain the operation of zener diode.  b) Explain the oeration of avalanche diode? | 2.5  2.5 | 5 |
| 8 | a) Define the clipping circuits.  b) Explain the different types of clipping circuits.  (or) | 2  3 | 5 |
| 9 | Comparison of CB, CC and CE configurations? | 5 | 5 |
| 10 | Derive the relation between   α**,** β, γ  (or) | 5 | 5 |
| 11 | a) define the Multistage CE amplifier ?  b) Explain the operation of Multistage CE amplifier circuit? | 2    3 | 5 |