***C-14 -AEI -303***

**STATE BOARD OF TECHNICAL EDUCATION & TRAINING**

**MODEL PAPER -I**

**ELECTRONIC DEVICES & APPLICATIONS**

[Time: 3 Hours] [Total Marks: 8**0]**

 **PART – A 10x 3 = 30**

**Instructions :** *Answer all questions. Each question carries two marks.*

1. Define Doping.
2. Define Forward and Reverse Bias with respect to Diodes.
3. State the need of Filter.
4. Define Alpha, Beta and Gamma Factors(Current Amplification factor).
5. Draw the CE(Common Emitter) Configuration of transistor

6) List the advantages of JFET over BJT.

7) List the applications of UJT.

8) List different thyristor family devices.

9) Draw the Volt-Ampere characteristics of SCR

10) Define IC

.

 **PART – B 5 x10 = 50**

**Instructions :** *Answer any five questions. Each question carries ten marks*

11) Describe the working of PN junction Diode with various biasing voltages

1. Explain working principle and applications of Varactor diode

 13) Explain the working of PNP and NPN Transistors.

14) Compare the performance characteristics of transistor in CB, CE and CC configurations

15) Explain the construction and working of JFET.

1. Explain the working of SCR

 17) Explain construction and working of Diac.

18) i) Give the concept of differential amplifier

 ii) Explain the formation of PN junction diode

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**STATE BOARD OF TECHNICAL EDUCATION & TRAINING**

**MODEL PAPER -II**

**ELECTRONIC DEVICES & APPLICATIONS**

 [Time: 3 Hours] [Total Marks: **80]**

 **PART – A 10x 3 = 30**

**Instructions :**  *Answer all questions. Each question carries two marks.*

1. Sketch energy level diagram for Semiconductor

 2) List the applications of Diode

 3) Draw the circuit Symbols of

 i) pn-Diode.

 ii) Zener Diode.

 iii) Varactor Diode.

. 4) Draw the circuit symbols of pnp and npn Transistors.

1. List the Operating Regions of transistor.

 6) Give the classification of FETs

 7) Give the expression for intrinsic stand-off ratio.

 8) List the applications of SCR.

 9) Draw the Volt-ampere characteristics of Diac

. 10) List the specifications of ICs.

 **PART – B 5 x 10 = 50**

**Instructions :**  *Answer any two questions. Each question carries seven marks*

11) Give the expression for efficiency, peak inverse value, and ripple factor of Half Wave Rectifier .

 12) Explain working principle and applications of Tunnel diode.

13) Compare the performance characteristics of transistor in CB, CE and CC configurations.

14) Describe the working of transistor as an amplifier (CE Configuration).

15) Explain the working principle of UJT.

16) Explain the Volt-Ampere characteristics of SCR.

17) Explain construction and working of Triac.

18) i) Compare ICs with discrete component circuits.

. ii) Distinguish between Intrinsic and extrinsic Semiconductors.