

# GUJARAT TECHNOLOGICAL UNIVERSITY

B.VOC- SEMESTER-I EXAMINATION – SUMMER 2025

Subject Code:1110702

Date:23-05-2025

Subject Name: Fundamental of Analog Electronics

Time:02:30 PM TO 04:30 PM

Total Marks:50

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

|           |  | Marks |
|-----------|--|-------|
| Q.1       | (a) Explain Energy band diagram of Conductor, Insulator and Semiconductor.     | 05    |
|           | (b) Explain Forward & Reverse Characteristics of PN junction diode.            | 05    |
| Q.2       | (a) Explain Seven Segment Display.   | 05    |
|           | (b) Explain Half wave rectifier with waveforms.                                | 05    |
| <b>OR</b> |  |       |
|           | (b) Explain Full wave rectifier with waveforms.                                | 05    |
| Q.3       | (a) Explain Common Emitter NPN Transistor with its characteristics.            | 05    |
|           | (b) Derive relationship between $\alpha$ & $\beta$ .                           | 05    |
| <b>OR</b> |  |       |
| Q.3       | (a) Compare CE & CC configuration of Transistor.                               | 05    |
|           | (b) Explain Transistor as Amplifier with necessary Circuit and Waveforms.      | 05    |
| Q.4       | (a) Explain DC Load Line of Transistor.  | 05    |
|           | (b) Explain N Channel JFET Characteristics with necessary Circuit & Waveforms. | 05    |
| <b>OR</b> |  |       |
| Q.4       | (a) Explain Transistor as a switch.  | 05    |
|           | (b) Explain P Channel JFET Characteristics with necessary Circuit & Waveforms. | 05    |
| Q.5       | (a) Write down difference between BJT & FET.                                   | 05    |
|           | (b) Draw & Explain Block diagram of Regulated Power Supply.                    | 05    |
| <b>OR</b> |  |       |
| Q.5       | (a) Explain N Channel MOSFET with necessary Circuit & Waveforms.               | 05    |
|           | (b) Explain Working of Voltage regulator IC 7805.                              | 05    |

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