**PARUL UNIVERSITY**

**FACULTY OF ENGINEERING & TECHNOLOGY**

**DEPARTMENT OF ELECTRICAL ENGINEERING**

**Electrical and Electronics Engineering SUBJECT CODE: 303106103**

QUESTION BANK

***CHAPTER-3***

1. What are the differences between Common base, common emitter and common collector configuration?
2. Explain the following terms. i) Semiconductor material ii) P-Type material iii) Doping iv) Ripple factor ii) N-Type material.
3. Explain about unbiased and biased conditions of PN junction diode with its V-I characteristics.
4. What is the use of voltage multiplier? Explain about half wave voltage doubler with its input & output wave form.
5. What is rectifier? Explain about half wave rectifier and derive the equation for Idc, Vdc & Irms.
6. Explain formation depletion region in PN junction diode.
7. Write a short note on forward bias and reverse bias in PN junction diode.
8. Explain the unbiased series clipper circuits with necessary waveforms.
9. Compare the Half-wave rectifier and full-wave rectifier.
10. Explain the different types of clamper circuit with necessary waveforms.
11. Draw the output characteristics of BJT. Explain the different operating regions in the output characteristic.
12. Explain Voltage divider bias circuit and also explain about DC load line & Q-point.
13. Compare CB, CC, & CE configuration.
14. Explain transistor as a switch along with its operating regions.
15. Draw full-wave rectifier circuits for center tapped transformer. Explain the operation with input and output wave form.

***CHAPTER-4***

1. Briefly explain all the blocks for DC regulated power supply. Which IC we use to generate +9v at the output side?
2. Explain the fundamental principle behind a series voltage regulator.
3. Differentiate between fixed and adjustable voltage regulators.
4. How does the 79XX series differ from the 78XX series in terms of operation?
5. Provide an overview of the operating principle of a switched-mode power supply (SMPS).
6. What are the advantages and challenges associated with using SMPS in electronic devices?

***CHAPTER-5***

1. Explain the difference between sensors and transducers.
2. Define what a sensor is and how it functions in the context of electronic systems.
3. Classify transducers based on their primary function (e.g., input, output, control).
4. Categorize electronic sensors based on their sensing principles (e.g., optical, thermal, pressure).
5. Explain the working principles of at least three different types of sensors.