Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–III • EXAMINATION – SUMMER.2015

Subject Code: X30901 **Date: 29/05/2015**

Subject Name: BASIC ELECTRONICS

Time: 02.30pm-05.00pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain V-I characteristic of P-N junction diode.	**07**
	(b)	Explain P-N junction diode as a half wave rectifier with necessary diagram.	**07**
Q.2	**(a)**	Write a short note on comparison of CC, CB and CE configurations.	**07**
	(b)	What is transition capacitance? Derive equation for it	**07**
		OR	
	(b)	Explain forward and reverse biasing of diode.	**07**
Q.3	**(a)**	Explain zener diode as a voltage regulator.	**07**
	(b)	Explain the working of transistor in CE configuration. Also draw its input-output characteristics.	**07**
		OR	
Q.3	**(a)**	What is thermal runaway and thermal stability?	**07**
	(b)	Discuss V-I characteristic of FET. Explain what is pinch off voltage?	**07**
Q.4	**(a)**	Explain working and construction of MOSFET.	**07**
	(b)	Classify the power amplifiers based on position of Q point, Operating cycle and efficiency.	**07**
		OR	
Q.4	**(a)**	State different biasing techniques used for biasing transistor amplifiers. Explain any one in detailed.	**07**
	(b)	Explain energy band diagram of insulator, semiconductor and metal.	**07**
Q.5	**(a)**	Write a short note on push pull amplifier.	**07**
	(b)	Explain bias compensation technique for stabilization.	**07**
		OR	
Q.5	**(a)**	Classify the power amplifiers based on position of Q point, Operating cycle and efficiency	**07**
	(b)	Explain h-parameter for CB configurations.	**07**

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