Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

P.D.D.C. Sem- III Examination December 2010

Subject code:X30901 **Subject Name: BASIC ELECTRONICS**

Date: 11 /12 /2010 **Time: 10.30 am – 01.00 pm**

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 diode characteristics and how can we obtain its parameter from the graph.	**07**
	(b)	Explain how to obtain output and input characteristics of C-E configuration and which parameter can be obtain from this characteristics.	**07**
Q.2	(a)	What is biasing? Why we are providing biasing to transistor? Which are the important parameters to be observed while designing biasing circuit?	**07**
	(b)	What is load line analysis for transistor amplifier? In which condition the position of operating point is shifting?	**07**
		OR	
Q.2	(a)	Give the comparison between the different transistor configuration	**07**
	(b)	Explain voltage divider biasing method of transistor? What is the advantage of this method?	**07**
Q.3	(a)	Explain how zener diode can be used as regulator for variable input voltage and variable output current .	**07**
	(b)	Explain series and shunt clipper using a diode? Also explain series bias clipper by wave form?	**07**
		OR	
Q.3	(a)	Expalin the clamper circuit? How we can obtain voltage double circuit using diode?	**07**
	(b)	Explain with reason why common emitter configuration is commonly used configuration among all configuration? Derive relationship between alpha(α) and beta(β).	**07**
Q.4	(a)	Explain single phase half wave rectifier? Derive the equation of rectification efficiency? Why inductor filter is not suitable for half wave rectifier?	**07**
	(b)	Explain full wave rectifier with centre tape? Draw its output wave form with capacitor filter?	**07**
		OR	
Q.4	(a)	Explain working and construction of FET under no bias and bias condition?	**07**
	(b)	How we can obtain output and transfer characteristics for FET? How we can obtain the parameters of FET from this characteristics?	**07**
Q.5	(a)	Explain push-pull amplifier with circuit diagram.	**07**
	(b)	Explain class-A and class-B transistor amplifier.	**07**
		OR	
Q.5	(a)	Explain FET as a voltage variable resistor.	**07**
	(b)	Explain different bias compensation techniques used for transistor biasing.	**07**

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