Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–III EXAMINATION – WINTER 2015

Subject Code:X30901 Date:18/12/2015

Subject Name: Basic Electronics

Time: 10:30pm to 01:00pm 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 the comparison between half wave rectifier, full wave rectifier with centre tap and full wave bridge rectifier.	7
	(b) State and explain electrical properties of Ge(Germanium) and Si(Silicon).	7
Q.2(a)	Explain the forward and reverse bias characteristics of P-N junction diode. Also explain its current components during forward and reverse bias.	7
	(b) Explain 'Zener diode' as a voltage regulator.	7
	OR	
	(b) Explain Class A and Class b transistor amplifier.	7
Q.3(a)	Explain full wave rectifier circuit with centre tap and derive its output equation.	7
	(b) Explain h-parameters for CE configuration.	7
	OR	
Q.3(a)	Explain the energy band theory of crystals, insulators, semiconductors and metals with necessary diagrams.	7
	(b) Explain, what is pinch off voltage? Discuss V-I characteristics of FET.	7
Q.4(a)	Discuss comparison of CB, CE and CC configuration of transistor amplifiers.	7
	(b) Explain transformer coupled audio power amplifier in detail.	7
	ORs	
Q.4(a)	Explain tunnel diode with its characteristics in detail.	7
	(b) Write a short note on Hall effect.	7
Q.5(a)	Explain working and construction of MOSFET.	7
	(b) Write a short note on clipping circuit with necessary waveform.	7
	OR	
Q.5(a)	Explain 'Drift Current' and 'Diffusion Current'.	7
	(b) Explain the formation of n-type and p-type semiconductors.	7

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