

GUJARAT TECHNOLOGICAL UNIVERSITY
BE –SEMESTER 1&2(NEW SYLLABUS)EXAMINATION- WINTER 2018

Subject Code: 3110016**Date: 08-01-2019****Subject Name: basic electronics****Time: 10:30 am to 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.

		Marks
Q.1	(a) Explain V-I characteristic of tunnel diode.	03
	(b) What is zener breakdown? What is avalanche breakdown? Compare both the type of breakdown.	04
	(c) Write a short note: V-I characteristic of P-N junction diode.	07
Q.2	(a) Design and explain basic NAND gate using DTL logic.	03
	(b) Explain following gate using their truth table, logic symbol and equation. Ex-NOR, NAND, NO	04
	(c) Draw and Explain bridge rectifier. Explain advantage and disadvantage of bridge rectifier over full wave rectifier.	07
OR		
Q.3	(c) Write a short note: Biased clipper circuit.	07
	(a) Derive the relation between current gain α and β	03
	(b) What is DC load line? Explain with necessary diagram.	04
	(c) Draw and explain input and output characteristic of transistor in common emitter configuration.	07
OR		
Q.3	(a) What is stability factor? Explain.	03
	(b) Give comparison between CE, CB and CC configuration of transistor.	04
	(c) What are the different method for biasing the transistor. Explain any two method with necessary circuit diagram.	07
Q.4	(a) Why biasing circuits are required?	03
	(b) Explain why NAND and NOR gate are called universal gate?	04
	(c) Explain application of transistor as a switch.	07
OR		
Q.4	(a) List out the salient feature of emitter follower.	03
	(b) Explain various properties of CB amplifier.	04
	(c) Draw and explain the transistor a.c. equivalent circuit.	07
Q.5	(a) Give comparison of BJT and JFET.	03
	(b) Draw and explain the self bias circuit of FET.	04
	(c) Draw and explain various characteristic of JFET	07
OR		
Q.5	(a) What are the advantage of N-Channel MOSFET over P-Channel MOSFET.	03
	(b) Explain the application of FET as a buffer amplifier.	04
	(c) Write a short note: E-Type MOSFET	07