

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-I &II (NEW) EXAMINATION – SUMMER-2019

Subject Code: 3110016

Date: 07/06/2019

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)	Differentiate between insulator, conductor and semiconductor	03	
	(b)	Explain forward bias PN junction diode with diagram	04	
	(c)	Explain full wave bridge rectifier with neat diagram	07	
Q.2	(a)	Explain LED diode	03	
	(b)	State different types of diodes. Describe process of testing diode with multi meter.	04	
	(c)	What is break down diode?? Explain working of zener break down and avalanche break down	07	
OR				
Q.3	(c)	Why biasing is important in transistor? Explain voltage divider bias with diagram.	07	
	(a)	What is use of coupling and bypass capacitor?	03	
	(b)	Explain PIN photo diode	04	
Q.3	(c)	Draw the circuit of transistor in CE configuration. Sketch the output characteristics and explain active, saturation and cutoff regions	07	
	OR			
	Q.3	(a)	What is varactor diode? How capacitance of a diode varies with reverse voltage?	03
(b)		Explain AC loadline with respect to BJT	04	
(c)		Compare CE, CB and CC configuration with respect to different transistor characteristics	07	
Q.4	(a)	What is FET? State important features of FET.	03	
	(b)	Compare BJT and FET	04	
	(c)	Write short note on MOSFET.	07	
OR				
Q.4	(a)	Explain clipping circuit	03	
	(b)	Explain (i) Unipolar device (ii) Transconductance	04	
	(c)	Write shortnote on JFET	07	
Q.5	(a)	Draw the symbol of NPN and PNP transistor. What is use of transistor?	03	
	(b)	Among TTL and CMOS digital logic family which one is better and why?	04	
	(c)	Draw symbol and explain truth table of all basic logic gates	07	
OR				
Q.5	(a)	State advantage of transistor	03	
	(b)	Explain (i)universal gate (ii) EX-OR logic gate	04	
	(c)	Give comparison between different types of digital logic families	07	
