Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–I & II (NEW) EXAMINATION – SUMMER 2024

Subject Code:3110016 Date:06-07-2024

Subject Name:Basic Electronics

Time:02:30 PM TO 05:00 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

Q.1	**(a)**	Explain series positive clipper with diagram.	**03**
	(b)	Draw and explain V-I characteristic of P-N junction diode.	**04**
	(c)	Draw and Explain bridge rectifier. Explain advantage and disadvantage of bridge rectifier over full wave rectifier.	**07**
Q.2	**(a)**	Drive the relation between current gain α and β for CE configuration.	**03**
	(b)	Draw the symbol of NPN & PNP transistor. Also state the advantage of transistor.	**04**
	(c)	Draw and explain input and output characteristic of transistor in CE configuration.	**07**
		OR	
	(c)	Compare CE, CB, and CC configuration with respect to different transistor characteristics.	**07**
Q.3	**(a)**	Explain V-I characteristics of tunnel diode.	**03**
	(b)	Explain Schottky diode in details.	**04**
	(c)	Comparison between P-N junction Diode and Zener Diode.	**07**
		OR	
Q.3	**(a)**	Advantage, disadvantage and application of LED.	**03**
	(b)	Compare PIN diode and Photo Diode.	**04**
	(c)	State the applications of Rectifier, and Comparison of Halfwave, Full-wave center- tap and Full-wave Bridge rectifier.	**07**
Q.4	**(a)**	List out the salient feature of emitter follower.	**03**
	(b)	Classification of Logic families in details.	**04**
	(c)	Explain application of Transistor as a switch.	**07**
		OR	
Q.4	**(a)**	Explain Negative Clamping circuit with diagram.	**03**
	(b)	Explain why NAND and NOR gate are called universal gate.	**04**
	(c)	Discuss MOSFET in details.	**07**
Q.5	**(a)**	Define the use of Coupling capacitor.	**03**
	(b)	Give Comparison of BJT and FET.	**04**
	(c)	Draw symbol and explain all logic gates in details.	**07**
		OR	
Q.5	**(a)**	Explain the properties and application of common base amplifier.	**03**
	(b)	State advantage, disadvantage and application of FET.	**04**
	(c)	Give comparison between different types of digital logic families.	**07**

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