Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII(NEW) EXAMINATION – SUMMER 2019

Subject Code: 2172408 Date:16/05/2019

Subject Name:Advanced Power Electronics Devices & Interface Circuits

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.**

Q.1	**(a)**	State applications of WBG materials.	**03**
	(b)	State functions of driver circuits.	**04**
	(c)	Explain the any Non-Isolated Driver ICs used for Half Bridge.	**07**
Q.2	**(a)**	State different methods of galvanic isolation.	**03**
	(b)	Explain the Hall Effect Current Sensors.	**04**
	(c)	Explain the measurement & interfacing of analog signals with Digital System.	**07**
		OR	
	(c)	Explain any DC Current measurement techniques.	**07**
Q.3	**(a)**	Draw schematic diagram of isolated linear amplifier.	**03**
	(b)	Explain the Linear Opto coupler.	**04**
	(c)	Write technical note on differential voltage probe.	**07**
		OR	
Q.3	**(a)**	Explain the importance of Grounding for Power Circuits.	**03**
	(b)	Explain the F to V Converter.	**04**
	(c)	Explain the Interfacing of Signals Using Galvanic Isolation.	**07**
Q.4	**(a)**	Explain the Power Scope.	**03**
	(b)	Explain the Principle of Frequency Measurement.	**04**
	(c)	Explain how a TTL IC can be interfaced with CMOS IC. Draw interconnection diagrams also.	**07**
		OR	
Q.4	**(a)**	State various principles used in transducers used for current measurement in industry.	**03**
	(b)	What is logic analyzer? State its applications.	**04**
	(c)	Explain the Interfacing of Digital Signals with Different Voltage Levels.	**07**
Q.5	**(a)**	State various logic families.	**03**
	(b)	Explain the Signal Conditioning.	**04**
	(c)	It is required to interface a logic signal of 0-24 V with microprocessor. With neat diagram explain interface circuit required for this.	**07**
		OR	
Q.5	**(a)**	What is meaning of VOH and VOL voltage levels of logic ICs.	**03**
	(b)	Write the Merits and Demerits of WBG materials.	**04**
	(c)	Write technical note on current probe for power electronics.	**07**

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