

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**
