

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2022****Subject Code:2172408****Date:06/06/2022****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.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) State applications of WBG materials.	03
(b) State the working principle of frequency & speed measurement.	04
(c) Explain the any Non-Isolated Driver ICs used for Half Bridge Rectifier.	07
Q.2 (a) Write a short note to use power scope for power electronics.	03
(b) Write a short note on grounding for power circuits.	04
(c) Write the merits and demerits of wide bang gap power semiconductor devices.	07
OR	
(c) Explain the Galvanic Isolation & its importance.	07
Q.3 (a) State different methods of protecting power switches against over load.	03
(b) Explain the Hall Effect Current Sensors.	04
(c) Explain the F to V Converter in detail.	07
OR	
Q.3 (a) Explain any one DC current measurement technique.	03
(b) Explain the Linear Opto coupler.	04
(c) Explain isolated TRIAC driver IC in detail.	07
Q.4 (a) Explain the signal conditioning.	03
(b) Write the Merits and Demerits of WBG materials.	04
(c) Explain the measurement & interfacing of analog signals with Digital System.	07
OR	
Q.4 (a) State various logic families.	03
(b) Write a technical note on Current Transformer.	04
(c) Explain how a TTL IC can be interfaced with CMOS IC. Draw interconnection diagrams also.	07
Q.5 (a) What is meaning of VOH and VOL voltage levels of logic ICs.	03
(b) What is logic analyzer? State its applications.	04
(c) Explain Grounding for Power Circuits.	07
OR	
Q.5 (a) Compare CRO with DSO.	03
(b) Draw the block diagram of CRO.	04
(c) Explain the Differential Voltage Probe & Current Probe.	07
