

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER- VI EXAMINATION – SUMMER 2026

Subject Code:3162417

Date:29-05-2026

Subject Name:Embedded Systems for Power 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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Define Embedded system. **03**
(b) What is a real time embedded system? Explain with an example. **04**
(c) What are different architectures of Embedded system? **07**
- Q.2** (a) State various components of embedded system. **03**
(b) What is input output device? Explain with an example. **04**
(c) State various types of processors and compare them. **07**
- OR**
- (c) 'Embedded system is brain of any standalone industrial application' discuss the statement. **07**
- Q.3** (a) What is meaning of computer architecture? **03**
(b) What is cache memory? How it improves overall speed of processor? **04**
(c) State and compare basic architectures of computing systems. **07**
- OR**
- Q.3** (a) State various interfacing bus protocols. **03**
(b) What is DMA? **04**
(c) 'Timer is an important peripheral for embedded processor'. Discuss the statement. **07**
- Q.4** (a) What is FPGA? **03**
(b) List names of various HDL. **04**
(c) Compare various communication methods giving example of each. **07**
- OR**
- Q.4** (a) What is a real time system? **03**
(b) Explain task scheduling. **04**
(c) Explain RTOS giving example. **07**
- Q.5** (a) State basic requirements of software design. **03**
(b) What is software engineering? **04**
(c) Time constraint is important parameter for any software. Discuss. **07**
- OR**
- Q.5** (a) Explain briefly testing of embedded system. **03**
(b) Why embedded system should be designed for testability? **04**
(c) Explain boundary scan methods. **07**
