

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA – SEMESTER – 5 • EXAMINATION – SUMMER 2018

Subject Code: 2650012

Date: 09-May-2018

**Subject Name: Software Development for Embedded Systems
(SD-ES)**

Time: 10.30 am to 1.00 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) Explain Time-to-Market design metric and derive equation of Percentage Revenue Loss. **07**
(b) Explain IC Technology. **07**
- Q.2** (a) Draw basic architecture of General Purpose Processor and Explain Datapath, Control Unit and Memory. **07**
(b) Design a 3-bit counter that counts the sequence : 1, 2, 4, 5, 7, 1, 2,..... Draw state diagram, state table, minimize the logic and draw circuit. **07**
- OR**
- (b) Explain Instruction Execution and Instruction Pipelining. **07**
- Q.3** (a) Define ADC and Explain Successive Approximation method for ADC. **07**
(b) Explain OTP ROM, EPROM and EEPROM. **07**
- OR**
- Q.3** (a) Compose 1Kx8 ROM into 2Kx16 ROM **07**
(b) What is cache memory? Explain any two cache mapping techniques. **07**
- Q.4** (a) Explain Bus Structure and Read, Write protocols with timing diagram. **07**
(b) What is Arbitration? List all arbitration methods and explain Daisy Chain Arbitration method. **07**
- OR**
- Q.4** (a) Draw functional block diagram specification of Digital camera and explain Informal Functional Specification and Refined Functional Specification. **07**
(b) Explain Peripheral to Memory transfer with DMA. **07**
- Q.5** (a) Explain Tool Chain for building embedded software. **07**
(b) Define Target System and Explain two methods of getting Embedded Software into Target System. **07**
- OR**
- Q.5** (a) Discuss goals of Testing Embedded Software on Host Machine and List abilities of Instruction Set Simulator. **07**
(b) List different modules of Tank Monitoring System and Explain any three modules. **07**
