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Total No. of Pages : 02

Total No. of Questions : 18

MCA (E-I) (2015 to 2018) (Sem.-3)

**EMBEDDED SYSTEM**

Subject Code : MCA-305C

M.Code : 74079

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students have to attempt any ONE question from each SECTION.
2. SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.

**SECTION-A**

1. Discuss the overall design process of embedded system.
2.
  - a) Briefly discuss the various challenges associated with the design of embedded systems.
  - b) Give overview of development and testing tools.

**SECTION-B**

3. Discuss the PIN diagram of 8-bit 40 Pin PIC micro-controller 16F877A.
4.
  - a) What is a timer? How does a counter performs Timer function and time-capture functions?
  - b) Briefly discuss various addressing modes.

**SECTION-C**

5.
  - a) Discuss the instruction set used in PIC16F877A.
  - b) Discuss different types of interrupts.
6. Write short notes on the following :
  - a) Memory-Mapped I/O
  - b) Assembler directives

### SECTION-D

7. Explain the use of embedded systems in networking and telecom applications.
8. Write short notes on the use of embedded systems in following :
  - a) Digital signal processing applications
  - b) Multimedia applications.

### SECTION-E

**Write briefly :**

9. What is the difference between requirements and specifications?
10. Name any two embedded system development environments.
11. What is the difference between microcontroller and microprocessor?
12. What is the difference between timer and counter?
13. What is the use of time comparator?
14. What do you mean by A/D convertor?
15. Name the components of embedded system hardware.
16. What do you mean by release time and response time of real time tasks?
17. Why embedded system is called as real-time system?
18. What do you mean by serial port?

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**