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02

Total No. of Pages :

Total No. of Questions : 09

MCA (2012 to 2014 Batch) (Sem.–5)

EMBEDDED SYSTEMS

Subject Code : MCA-501

Paper ID : [A3159]

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. **SECTIONS-A, B, C & D** contains **TWO** questions each carrying **TWENTY** marks each and students has 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. Explain the requirements and applications of embedded systems in detail with real life examples. Write note on development and testing tools.
2. Compare and contrast architectures for embedded system design. Elaborate on recent trends in the embedded systems.

SECTION-B

3. Explain the architecture of 8 bit PIC microcontroller 16F877A. What is the significance of special function registers?
4. Elaborate the bus architecture in embedded systems. Compare various addressing modes available in the same.

SECTION-C

5. Explain interrupt handling in embedded systems. Discuss instruction types of PIC microcontroller 16F877A with example.
6. How memory mapped I/O is handled in PIC microcontroller 16F877A? Discuss various elements of programming of PIC microcontroller with program.

SECTION-D

7. Elaborate the industrial and control applications of embedded system with examples.
8. Discuss the applications of embedded system in the area of networking and telecom with real life example.

SECTION-E

9. Write briefly :

- a. What is an embedded system?
- b. Give the classifications of embedded systems.
- c. List various issues for embedded software design.
- d. What is the need for LCD and LED displays?
- e. List various softwares for design of embedded system.
- f. Give some examples for large scale embedded systems.
- g. What are the two essential units of a processor on a embedded system?
- h. List various testing tools available for embedded system.
- i. What is the role of counter in embedded system?
- j. List assembler directives of PIC microcontroller 16F877A.