

Roll No.

Total No. of Pages : 02

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.**
- 3. Use of non-programmable scientific calculator is allowed.**

SECTION-A

- 1
 - a) What are various embedded software design issues? Explain in details.
 - b) What are various development and testing tools? Explain.
- 2 Explain the following :
 - a) Features of embedded system
 - b) Elements of embedded system

SECTION-B

- 3 What are various addressing modes? Explain merits and demerits of each addressing mode.
- 4 Write notes on the following :
 - a) Special function registers
 - b) Need of memory organization

SECTION -C

- 5 Explain the following :
- a) PIC 16F877A instruction set
 - b) Memory mapped I/O
- 6 What is interrupt? What are its types? Explain how an interrupt is handled.

SECTION-D

- 7 Write notes on the following :
- a) Need of embedded system in consumer applications
 - b) Role of embedded system in Networking applications
- 8 What are various digital signal processing and multimedia applications? Discuss the role of embedded system in different digital signal processing and multimedia applications.

SECTION-E

- 9 **Write briefly :**
- a) What is difference between microprocessor and microcontroller?
 - b) What is communication software?
 - c) List various recent trends of embedded system.
 - d) What is need of microcontroller?
 - e) What is use of assembler directive?
 - f) What is significance of address bus?
 - g) What is timing diagram?
 - h) List any two data transfer instructions for PIC 16F877A.
 - i) List any tools used for designing an embedded system.
 - j) What are sophisticated embedded systems?