Roll No. | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 09

MCA (2013 and 2014 Batch) (Sem.–5)

EMBEDDED SYSTEMS

Subject Code : MCA-501

M.Code : 72154

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 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. What are Embedded systems? Discuss the features and applications of embedded systems in detail.

2. Explain the common architectures for embedded system design.

SECTION-B

3. Discuss in detail the 8-bit 40 pin PIC microcontroller 16F877A.

4. Highlight the advantages of using data in digital form over its analog form. Explain the working of successive approximation type of analog to digital converter.

SECTION-C

5. Discuss the instruction set of PIC 16F877A.

6. Explain various constructs used for programming PIC microcontrollers.

SECTION-D

7. Discuss the applications of Embedded Systems in networking and telecom.

8. Discuss the applications of embedded systems in the area of consumer appliances.

SECTION-E

9. Answer the following :

a) What are the requirements of embedded systems?

b) What are the development and testing tools for embedded systems?

c) What do you mean by assembler directives?

d) What are the multimedia applications of embedded systems?

e) What is Memory-mapped I/O?

f) What are Special Function Registers?

g) Differentiate between direct and relative addressing modes with an example.

h) What is multi-level bus architecture? What is its need?

i) What is a PORT? What is its use in a microcontroller?

j) Briefly write about PIC 16F877A counters.

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.