C09–AEI–**403**

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BOARD DIPLOMA EXAMINATION, (C–09)
MARCH/APRIL—2014
DAEIE—FOURTH SEMESTER EXAMINATION

MICROCONTROLLERS AND ITS APPLICATIONS

Time : 3 hours] [*Total Marks* : 80

PART—A 3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define bit, byte and word.

2. List the special function registers of 8051.

3. Distinguish between machine cycle and *t*-states.

4. List different addressing modes of 8051.

5. Explain ACALL and RET instructions.

6. What is meant by fetch cycle and execution cycle?

7. Explain the operating modes of 8255.

8. List any three features of DMA.

9. Draw block diagram of printer interface with 8051.

10. Draw the flowchart for a simple traffic controller.

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Draw the PIN diagram of 8051 and explain the function of each PIN.

12. Classify the instruction set of 8051 into various groups and explain them with example.

13. *(a)* With a timing diagram, explain the various operations performed in memory read operation of 8051.   5

(b) Explain conditional and unconditional jump instructions.   5

14. Write a program to find the largest data in an array along with the flowchart.

15. Explain push and POP instructions with examples.

16. Explain the sequence of program when a subroutine called and executed.

17. Explain interfacing of 8257 with 8051.

18. Draw the interfacing diagram of a stepper motor and explain.

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