C14–AEI–**504**

4610

BOARD DIPLOMA EXAMINATION, (C–14)

OCT/NOV—2017

DAEIE—FIFTH SEMESTER EXAMINATION

MICROCONTROLLERS AND APPLICATIONS

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

PART—A   3×10=30

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

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

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

1. Distinguish between microprocessor and microcontroller in any three aspects.

2. List any three features of 8051 microcontroller.

3. Draw the block diagram of microcomputer.

4. Define fetch cycle.

5. Mention any three differences between machine level programming and assembly level programming.

6. Write the instruction format of 8051 with an example.

7. Define subroutine.

8. State the function of PUSH instruction.

9. Draw the block diagram of 8255.

10. Draw the format of control word register of 8255.

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 purpose of each pin.

12. *(a)* List and explain any two unconditional jump instructions. 1+4

(b) List and explain any two conditional jump instructions with example. 1+4

13. Explain any five data transfer instructions of 8051 with examples.

14. List and explain different types of CALL instructions and RET instructions. 2+8

15. *(a)* Draw any five symbols used in flowcharts and state the function of each symbol. 5

(b) Draw a flowchart for addition of two 8-bit numbers. 5

16. Write a program to multiply two 8-bit numbers stored in the memory location 6000 H and 6001 H. And store the result in the locations 6002 H and 6003 H.

17. Draw and explain the functional block diagram of DMA controller 8257.

18. Explain how stepper motor can be interfaced with 8051 microcontroller.

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