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BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—2018

DECE—SIXTH SEMESTER EXAMINATION

MICRO CONTROLLERS

Time : 3 hours]

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. Write any six features of 8051 microcontroller.

2. Define fetch cycle and execute cycle.

3. List any three arithmetic instructions and their functions.

4. Write any three unconditional branching instructions.

5. What is addressing mode? Give one addressing mode with example.

6. Define subroutine and explain its use.

7. Write a program to provide delay using loop technique.

8. List different operating modes of 8255PPI.

9. List any three interfacing peripherals.

10. List the six features of 8251.

PART—B

10×5=50

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

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

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

11. Draw the functional block diagram of 8051 microcontroller and explain the function of each block.

12. Explain the memory organization of 8051.

13. *(a)* Define op-code and operand of an instruction with example.

(b) Classify the instruction set with examples.

14. *(a)* List any four data transfer instructions.

(b) Explain JC, JNC and JNZ instructions.

15. *(a)* Explain MULAB and DIV AB instructions.

(b) Explain how information is exchanged between program counter and stack pointer when subroutine is called.

16. *(a)* Explain any two conditional call instructions.

(b) Write an assembly language program to add 10 natural numbers using counter technique.

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

18. *(a)* List the features of 8255.

(b) Draw the functional block diagram of 8251 programmable communication interface.

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