



C14-EC-405

4459

**BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2018
DECE-FOURTH SEMESTER EXAMINATION**

MICROPROCESSOR AND MICROCONTROLLER PROGRAMMING

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. Draw the block diagram of a microprocessor.
2. List the latest processors used in desktop/laptop computers.
3. List any three features of 8051 microcontroller.
4. What is the purpose of PSW register?
5. Write any three comparisons between machine language and assembly language.
6. State any six basic operations of arithmetic group of instructions.
7. What is a flowchart? Give various symbols used in flowcharts.
8. State the sequence of operation involved in PUSH and POP instruction.
9. Explain RS 232C standard.
10. What is the interrupt service routine?

PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

- 11.** (a) Draw the pin out diagram of 8085 microprocessor.
(b) Explain the execution of LDA instruction using timing diagram.
- 12.** (a) Draw the functional block diagram of 8051 microcontroller.
(b) Explain interrupts in 8051 microcontroller.
Write a short notes on :
- 13.** (a) Timers/Counters of 8051
(b) Explain various special function Registers.
- 14.** Explain the following instructions:
(a) DIV AB (b) MOVX A,@Ri (c) ADDC A,#data
(b) XRL A,#data (e) SETB C
- 15.** Explain the timing diagram for Memory Read and Memory Write operations of 8051 microcontroller.
- 16.** (a) Mention the important steps in writing and trouble shooting a simple program.
(b) Explain about Multiplexing of Address and Data Bus of 8085 microprocessor.
- 17.** (a) Write a program to add two 16-bit numbers. The numbers are 2CE7 H and 3B8A. Place the sum in R5 and R4; R4 should have the lower byte.
(b) Explain nesting and multiple ending of Subroutines.
- 18.** Write a program to generate a square wave of 2kHz frequency on p1.3. Assume 8051 crystal frequency is 12 MHz.

