WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 5th Semester Examination, 2021-22

ELSACOR11T-Electronics (CC11)

Microprocessors and Microcontrollers

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.
All symbols are of usual significance.

GROUP-A

1.   Answer any *five* questions from the following: 2×5 = 10

(a) What is delay subroutine?

(b) Define 'Word' and 'Instruction'.

(c) Why microprocessor is so called?

(d) Explain the meaning of the following instructions — PCHL, XCHG.

(e) Calculate the time required to execute the instruction MOV C, B if the system clock frequency is 3 MHz.

(f) Why Hex code is used in a microprocessor?

(g) How parity flag is affected during execution?

(h) Name the addressing modes of 8051 Microcontroller.

(i) What is the RAM and ROM size of Intel 8051 Microcontroller?

GROUP-B

Answer any *six* questions from the following   5×6 = 30

2.   Explain the action of LHLD 2040H and SHLD 2050H in 8085 microprocessor.   5

3.   Draw the timing diagram of MVI A, 80H.   5

4. (a) Write the function of a program counter.   2

   (b) What happens to contents of the program counter when an 8085 encounters a CALL instruction?   3

5. Write an ALP to find the number of '0's and '1's present in a 16-bit binary number.   5

6. What is flag register of 8085? Explain all the flags and their functions.   1+4

7. (a) What is a subroutine of a program?   1+2+1+1

    (b) What are different instructions of 8085 microprocessor can be used for subroutine control?

    (c) What are the vectored and non-vectored interrupts?

    (d) Explain the difference.

8. Write an ALP to find value of $Y = 3X^2 + 4X + 5$.   5

9. How a programmer can change the content of all the status flags? Explain with simple example.   1+4

10. Compare between the RISC and CISC architectures with suitable diagrams.   5

11. Write a short note of the RAM memory space allocation and register banks of 8051 microcontroller.   5

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within* 1 *hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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