WEST BENGAL STATE UNIVERSITY

B.Sc. Honours/Programme 4th Semester Examination, 2022

ELSHGEC04T/ELSGCOR04T-ELECTRONICS (GE4/DSC4)

ELECTRONIC SCIENCE

Time Allotted: 2 Hours | Full Marks: 40

The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.

GROUP-A

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

   (a) Define machine cycle and T-state.

   (b) Explain in brief, the differences between a JMP and a CALL instruction.

   (c) List the four instructions which control the interrupt structure of 8085 microprocessor.

   (d) Why data bus lines of a microprocessor use bi-directional Tri-state Logic buffers?

   (e) What is program status word of 8051?

   (f) What does a stack-pointer do in 8085?

   (g) What do you mean by SFR?

   (h) What is the function of $\overline{\text{PSEN}}$ signal in 8051?

GROUP-B

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

2. What are the functions of program counter, stack pointer, instruction register and temporary resistor and accumulator? 1+1+1+1+1

3. What do you mean by addressing mode? Explain different addressing modes of 8085 with example. 1+4

4. (a) What is a flag register? 1+4

   (b) Discuss the function of various status flags with respect to 8085 microprocessor?

5. Write an assembly language program to find the two's complement of a given number which is stored in a suitable memory location using 8085. 5

6. Write an assembly language program to add two 16 bit numbers using 8051 micro controller. 5

7. Classify the instruction set of 8051. 5

8. (a) After a 8085 executed the instruction SUB A, what will be the contents of the flags Z and CY? 1+4

   (b) Write a program in 8051 to load 65 H in register C, 92 H in Accumulator, and display the numbers through the ports 'PORT0' and 'PORT1' respectively.

9. (a) Distinguish between absolute decoding and partial decoding of microprocessor. $2\frac{1}{2}+2\frac{1}{2}$

   (b) Distinguish between memory mapped I/O and peripheral mapped I/O.

10. Draw a neat schematic of the data memory of a 8051, and mark the different types of memories in it. 5

11. Explain in brief the following instructions of 8085. $2\frac{1}{2}+2\frac{1}{2}$

    (i) XRA reg.

    (ii) RRC.

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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