



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Hons./Programme 4th Semester Examination, 2020

**ELSHGEC04T/ELSGCOR04T-ELECTRONICS (GE4/DSC4)**

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.*

**SECTION-A**

1. Answer any **five** questions from the following: 2×5 = 10
- (a) Explain LDAX instruction of 8085 with an example.
  - (b) Write a program to exchange the data of PSW and HL pair of 8085.
  - (c) What is the function of program counter of 8085?
  - (d) What is the use of ALE signal in 8051 based system?
  - (e) Define DPTR in microcontroller.
  - (f) Explain the terms: Opcode, operand, mnemonic, assembly language.
  - (g) Why data bus lines are bidirectional and how many data lines are required in an 8-bit microprocessor?
  - (h) Write two different instructions by which we can clear accumulator in 8085 microprocessor.

**SECTION-B**

**Answer any two of the following** 15×2 = 30

2. (a) Write an assembly language program using 8085 instructions to multiply two unsigned 8-bit binary numbers using shift and add algorithm. Also, explain working of the algorithm with an example. 10
- (b) Distinguish between memory mapped I/O and I/O mapped I/O. 5
3. (a) Draw the memory map for the 128 bytes internal RAM of 8051 microcontroller. 5
- (b) Explain the alternate port functions of 8051 microcontroller. 10

4. (a) What are the different flags in 8085? 5  
(b) Explain the following instructions: MOV C, D; ADD B; XRA C; and CMA. 4  
(c) Write a program to add two 8 bit numbers and store the result in a specific memory location. 6
5. (a) What is microcontroller? Mention its application. 2+1  
(b) With a neat function block diagram explain the architecture of 8051 microcontroller. 6  
(c) Explain any three different addressing modes used in 8051 microcontroller. 6

**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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