WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 5th Semester Examination, 2020, held in 2021

CMSADSE01T-COMPUTER SCIENCE (DSE1/2)

MICROPROCESSOR

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 *four* questions from the following: 2×4 = 8

   (a) How READY signal is used in microprocessor?

   (b) Explain how a microprocessor differentiates a positive number from a negative number.

   (c) Discuss instruction cycle, machine cycle, and T-state.

   (d) Mention all the ports present in 8255.

   (e) What is cache controller?

   (f) What happens when RET instruction is executed?

GROUP-B

Answer any *four* questions from the following   8×4 = 32

2. (a) What are the different modes of 8255 interfacing? Discuss the working principal of each mode.   4+4

   (b) Compare memory mapped I/O and I/O mapped I/O.

3. (a) How does microprocessor differentiate between address and data? Clearly explain with necessary diagram(s).   6+2

   (b) What could be the maximum addressable memory for a microprocessor if the size of the address bus is 20 bits?

4. (a) What do you mean by interrupt? Explain in detail the different types of interrupt in 8085/8086.   (2+5)+1

   (b) Explain the need to demultiplex the bus AD7-AD0.

5. (a) Write a program in assembly language to print the third largest number from an array of numbers without using sorting.   6+1+1

   (b) What is the function of ALE in 8085 microprocessor?

   (c) What do you mean by 8-bit microprocessor?

6. (a) What are the differences between microprocessor and microcontroller?   4+2+2

   (b) Write down two examples where microcontrollers are more appropriate as compared to microprocessors.

   (c) What is the working principle of status signals S1 and S0?

7.   What are HOLD and HLDA? How are they used? Mention the differences between 8085 and 8086 microprocessors.   2+2+4

8.   Write short notes on (any *two*):   4+4

   (a) DMA controller

   (b) SIM and RIM instructions

   (c) Draw and discuss the timing diagram of two byte instruction.

   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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