

Roll Number: _____

Thapar Institute of Engineering & Technology, Patiala

Department of Computer Science and Engineering

END SEMESTER EXAMINATION

COEMBA (Third Year)

Course Code: UCS617

Course Name: Microprocessor Based Systems
Design

Jan 27, 2021—1430 hrs

Time: 2 Hours, M. Marks: 50

Name of Faculty: Harpreet

Note: (1) Attempt any 5 questions with proper justification and working.

(2) Assume missing data, if any, suitably.

- Q1** Elaborate the architecture of USART in detail. Why Transmitter and Receiver section called as double buffered system? (7+3)
- Q2(a) How 8085 and 8086 microprocessors respond to the interrupts? Elaborate in steps. (5)
- Q2(b) Write a program in any 8085/8086/ARM assembly language to find the factorial of given number. (5)
- Q3(a) What is the difference between LHLD and SHLD instruction? Illustrate with the help of timing diagrams. (5)
- Q3(b) Write a program in any 8085/8086/ARM assembly language to find the factorial of given number. (5)
- Q4(a) Explain different types of Assembler Directives with the help of example. (5)
- Q4(b) WAP to Generate a delay of 0.4 sec if the crystal freq is 5 MHz in 8085. (5)
- Q5(a) Write a program in any 8085/8086/ARM assembly language to divide two 16-bit numbers. (5)
- Q5(b) Discuss the following instructions with suitable example in 8086: (5)
- i. LEA
 - ii. AAM
 - iii. XLAT
 - iv. LOOP
 - v. TEST
- Q6(a) Explain the working of ports in different modes in Programmable Peripheral Interface. (6)
- Q6(b) Write a set of instructions to set bit 4 of Port C of 8255. Assume the address of Port A is 10H. (4)
- Q7 Differentiate between the following terms with example:- (2.5*4)
- i. Pre-Index and Post-Index Addressing in ARM
 - ii. Thumb and ARM Instructions
 - iii. CPSR and SPSR
 - iv. Little Endian and Big Endian