Fourth Semester B.E. Degree Examination, Jan./Feb. 2021
Microprocessors

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions, selecting at least TWO full questions from each part.*

PART – A

1 a. Write any four differences between read mode and protected mode memory system. **(04 Marks)**
   b. Explain read mode memory system of a personal computer system. **(06 Marks)**
   c. Explain briefly the programming model of 8086 through core – 2 microprocessor. **(10 Marks)**

2 a. Define paging. Discuss the memory paging with diagram. **(08 Marks)**
   b. Explain Data related addressing modes of 8086, with an example. **(08 Marks)**
   c. Define physical address. Discuss how physical address is generated in 8086 processor. **(04 Marks)**

3 a. Explain the following assembler directives with example.
      i) ASSUME   ii) PUBLIC AND EXTRN
      iii) MACRO and ENDM   iv) MODEL. **(10 Marks)**
   b. Write the instruction template (format) for the following instructions.
      i) MOV AX, DX   ii) MOV DX, [BP] 0200H   iii) MOV AL, [BX] [DI] **(06 Marks)**
   c. What is meant by segment override prefix? Explain with an illustration. **(04 Marks)**

4 a. Discuss shift and rotate instructions, with an example. **(08 Marks)**
   b. Explain FAR procedure and near procedure with an example. **(06 Marks)**
   c. Write an assembly level program to reverse a given string and check for palindrome **(06 Marks)**

PART – B

5 a. Write an 8086 ALP to find the factorial of a given number using recursive procedures. **(06 Marks)**
   b. Write a mixed ALP with 'C' to perform a simple calculator operations. **(10 Marks)**
   c. Write an 8086 ALP to convert the given binary number into its equivalent unpacked decimal and ASCII. **(04 Marks)**

6 a. Illustrate with a neat diagram, the working of 8086 in minimum mode. **(10 Marks)**
   b. Explain the memory read bus cycle of 8086 in minimum mode with a neat diagram. **(10 Marks)**

7 a. Discuss in brief commonly used memories. **(08 Marks)**
   b. With neat diagram, explain the Linear decoding techniques. **(08 Marks)**
   c. Compare and contrast the memories mapped I/O to I/O mapped I/O. **(04 Marks)**

8 a. With a neat block diagram, explain 82C55 PPI. Write the control words for
      i) PORT A input, PORT B output and PORTC output
      ii) PORT A output, PORT B input, and PORTC input in simple I/O mode. **(08 Marks)**
   b. With a neat diagram, explain 8254 PIT. **(06 Marks)**
   c. Explain briefly the interrupt vector table of 8086 microprocessor. **(06 Marks)**

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