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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)