Fourth Semester B.E. Degree Examination, Aug./Sept. 2020
Microprocssors

Time: 3 hrs.   Max. Marks:100

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

PART – A

1   a. What is Microprocssor? Explain with block diagram of computer system showing the various bus structures. **(06 Marks)**
    b. Draw the programming model of the 8086 through the core 2 and explain :
    i) Multipurpose Registers   ii) Special purpose Registers. **(10 Marks)**
    c. What is conventional memory? Explain Segment and offsets with example. **(04 Marks)**

2   a. What is Stack? With diagram, explain stack operation in detail. **(06 Marks)**
    b. Explain with example and diagram following address modes :
    i)   Register Indirect Addressing
    ii) Base – Plus – Index Addressing
    iii) Base – Relative – Plus – Index Addressing
    iv) Immediate Addressing. **(08 Marks)**
    c. Define Paging. Explain Page directory and page table. **(06 Marks)**

3   a. Explain following instructions with examples:
    i) CMP   ii) XLAT   iii) LEA   iv) XCHG. **(06 Marks)**
    b. Write an ALP to reverse a given string and check for palindrome. **(06 Marks)**
    c. What are assembler directives? Explain following assembler directives
    i) PROC and ENDP   ii) ORG   iii) EQU   iv) MARCO and ENDM. **(08 Marks)**

4   a. Explain shift and rotate instruction with example. **(08 Marks)**
    b. Explain the following instruction with example: i) SCAS ii) CMPS   iii) MOVS. **(06 Marks)**
    c. Write an ALP to sort n numbers using Bubble sort Algorithm in Ascending order. **(06 Marks)**

PART – B

5   a. What is modular programming? With reference to modulor programmings explain.
    i) Assembler and linker   ii) PUBLIC and EXTRN
    iii) Libraries   iv) Local variable in MACRO. **(10 Marks)**
    b. What is inline assembly? What is the main limitation of inline assembler? **(05 Marks)**
    c. What is the difference between PROCEDURE and MACRO? **(05 Marks)**

6   a. With neat diagram, explain the pinfunctions of 8086. **(07 Marks)**
    b. With neat diagram, explain fully buffered and latched 8086 microprocessor. **(07 Marks)**
    c. Explain Bus timings for read and write operations of 8086 system. **(06 Marks)**

7   a. Discuss in brief commonly used memories. **(05 Marks)**
    b. With neat diagram, explain simple nand gate decoder. **(08 Marks)**
    c. Explain with diagram, isolated and memory mapped I/O. **(07 Marks)**

8   a. With neat diagram, explain working of 8255 PPI. **(08 Marks)**
    b. With block diagram, explain the functional description of 8254 PIT **(08 Marks)**
    c. Write a note on Direct memory Access. **(04 Marks)**

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