



10CS45

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

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 Microprocessor? 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 : (10 Marks)
- i) Multipurpose Registers ii) Special purpose Registers.
- 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 : (08 Marks)
- i) Register Indirect Addressing
ii) Base – Plus – Index Addressing
iii) Base – Relative – Plus – Index Addressing
iv) Immediate Addressing.
- c. Define Paging. Explain Page directory and page table. (06 Marks)
- 3 a. Explain following instructions with examples: (06 Marks)
- i) CMP ii) XLAT iii) LEA iv) XCHG.
- b. Write an ALP to reverse a given string and check for palindrome. (06 Marks)
- c. What are assembler directives? Explain following assembler directives (08 Marks)
- i) PROC and ENDP ii) ORG iii) EQU. iv) MARCO and ENDM.
- 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 modular programmings explain. (10 Marks)
- i) Assembler and linker ii) PUBLIC and EXTRN
iii) Libraries iv) Local variable in MACRO.
- 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)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.