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Sahyadri College of Engineering & Management
CENTRAL LIBRARY
Adyar, Mangalore-7

10CS45

Fourth Semester B.E. Degree Examination, Dec.2018/Jan.2019
Microprocessors

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. What is μp? Explain how data, address and control bus interconnect various system components. **(06 Marks)**
b. Explain the flags of 8086 processor using suitable examples. **(08 Marks)**
c. What is pipelining? How is it achieved in 8086? **(06 Marks)**

2 a. What are the advantages of memory paging? Illustrate the concept of paging with a neat diagram. **(10 Marks)**
b. Discuss the following addressing modes with examples:
(i) Direct (ii) Register (iii) Base plus Index (iv) Immediate (v) Scaled Indexed. **(10 Marks)**

3 a. Write Bubble sort program using 8086 assembly instruction. **(08 Marks)**
b. Describe the following instructions with suitable examples:
(i) PUSH (ii) MUL (iii) IN (iv) AAA. **(08 Marks)**
c. Bring out the importance of XLAT instruction using a suitable program. **(04 Marks)**

4 a. Explain the following assembler directives with examples:
(i) DB (ii) EXTRN (iii) PROC (iv) SEGMENT **(08 Marks)**
b. Differentiate between procedures and macros. **(04 Marks)**
c. Write an ALP using 8086 instruction to count the number of zeroes in a given 8 bit number and store the result in memory location 'Res'. **(08 Marks)**

PART – B

5 a. Explain the basic rules for using assembly language programming for 16 bit DOS applications with the help of examples of assembly level program. **(08 Marks)**
b. What is inline assembly? Explain its need. **(06 Marks)**
c. Write a program to convert ASCII to Binary. **(06 Marks)**

6 a. With a neat timing diagram explain memory read cycle. **(08 Marks)**
b. Explain how address demultiplexing is done in 8086 processor based systems. **(07 Marks)**
c. Explain the functions of the following pins of 8086 μp.
(i) Reset (ii) Ready (iii) ALE (iv) BHE (v) INTR **(05 Marks)**

7 a. Explain the concept of 3-to-8 line decoder with the help of a neat diagram in detail. **(08 Marks)**
b. What is flash memory? Explain how a flash memory is interfaced to 8086 μp. **(06 Marks)**
c. Differentiate between memory mapped I/O and I/O mapped I/O. **(06 Marks)**

8 a. With internal block diagram, explain 8254 PIT. Give two applications of 8254. **(08 Marks)**
b. Briefly explain the control word format of 8255 in I/O mode and BSR. Give the control word format to program port A and port C lower as input and port B and port C upper as outputs ports in mode O. **(12 Marks)**

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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.

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