Roll No ....

EC - 302

B.E. III Semester Examination, December 2014
Computer System Organization
Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

    ii) All parts of each question are to be attempted at one place.

    iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

    iv) Except numericals, Derivation, Design and Drawing etc.

1. a) Explain the instruction formats of a computer.

   b) What is register transfer language?

   c) Discuss data transfer instruction.

   d) Write a program to execute and evaluate the arithmetic statement.

$$P = \frac{(x - y + z)*(m + n - o)}{Q + R*S}$$

     Using

     i)   Two-address instruction

     ii) Zero-address instruction

<div align="center">OR</div>

     What are the various types of addressing modes? Explain them in short with example.

2. a) Show the block diagram of the hardware that implements the following register transfer statement-

$$yT_2 : R_2 \leftarrow R_1, R_1 \leftarrow R_2$$

   b) Define the term-

     i)   Microprogram sequencing

     ii) Micro instruction sequencing

   c) Explain the difference between hardwired control unit and microprogrammed control unit.

   d) Explain the various branching techniques used in microprogrammed control unit.

<div align="center">OR</div>

     Draw and explain flowchart for addition and subtraction of floating point number.

3. a) Compare I/O verses memory lens.

   b) What do you mean by handshaking?

c) Write short note on 'interrupt initiated I/O'.

d) What do you mean by serial transmission and parallel transmission of data. Compare them.

OR

Differentiate followings:

i) I/O program control transfer and DMA.

ii) Isolated I/O and memory mapped I/O.

4. a) What is page fault?

b) Explain memory hierarchy in short.

c) Write short note on locality of reference.

d) What is need of virtual memory in computer system? Explain how the page map table is organized in virtual memory system.

OR

Discuss memory management in detail. Explain demand paging and swapping.

5. a) What is interconnected network?

b) Write short note on array processor.

c) Discuss Nano programmed control unit.

d) Write short note on:

i) Loosely coupled multiprocessor configuration.

ii) Closely coupled multiprocessor configuration.

OR

What do you mean by pipeline? Explain various pipeline conflicts.

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