Total No. of Questions : 8]   [Total No. of Printed Pages : 2

Roll No ....

IT-4005 (CBGS)
B.E. IV Semester
Examination, May 2018
Choice Based Grading System (CBGS)
Computer Architecture
Time : Three Hours
Maximum Marks : 70

Note: i) Total number of questions are eight.
ii) Attempt any five questions
iii) All questions carry equal marks.

1. a) Draw Von Neumann model of computer and explain all the subsystems of computer. rgpvonline.com

   b) What do you mean by logic micro operation? Explain any four of logic micro-operations. Draw one stage of logic unit with its function table.

2. a) Explain sign-magnitude, 1's and 2's complement numbers with their range for eight bit registers.

   b) Explain the process of multiplication using BOOTH method.

      Solve -5×2 using Booth method.

3. a) What do you mean by zero, one two and three address instructions? Give suitable examples.

   b) Explain PUSH and POP instructions. Differentiate infix and postfix notation with an example.

4. a) Explain the three ways of data transfer to and from peripherals.

   b) What is Cache? Explain the principle of "Locality of references". Enlist and explain replacement algorithms.

5. a) Explain hit ratio. Generate expression for hit ratio. Drive an expression for "effective access time (te)" if t_1 and t_2 are access time of cache and main memory respectively.h_1 is the hit ratio of cache. rgpvonline.com

   b) What is mapping? Name all the types of cache mapping and explain any one in detail.

6. a) What is multiprocessor? Explain the characteristics of multiprocessors.

   b) Define the terms: Pipeline, speed up ratio and memory interleaving.

7. a) Draw block diagram of memory hierarchy of computer system. Explain why 3 level hierarchy is necessary.

   b) Write a short note on virtual memory.

8. a) Page fault

   b) Daisy chaining

   c) Control memory

   d) Shift micro-operation

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