

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CSE/IT) (2011 onwards)
B.Tech.(3D Animation & Graphics) (2012 onwards)
(Sem.-3)

COMPUTER ARCHITECTURE

Subject Code : BTCS-301

Paper ID : [A1123]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A

1) **Write briefly :**

- a) What are the basic functional units of a computer?
- b) Draw the block diagram of a 2's complement Subtractor.
- c) Explain the concept of virtual memory.
- d) Discuss the different types of ROMs.
- e) What is Inter-process communication?
- f) Draw a schematic diagram of the memory hierarchy.
- g) What is a priority Interrupt?
- h) Briefly discuss the basic organization of a micro programmed control unit.
- i) The address of a memory location to be accessed is in register R_1 and the memory data are to be loaded into register R_2 . Specify the sequence of operations involved.
- j) Differentiate serial and parallel communication.

SECTION-B

- Q2) Explain in detail the CISC architecture.
- Q3) Briefly outline the concept of auxiliary memory and associative memory.
- Q4) Why page-table is required in a virtual memory system? Explain different ways of organizing a table.
- Q5) Explain, in detail the various addressing modes of Central Processing Unit.
- Q6) Briefly explain the concept of synchronization in context of inter-process communication.

SECTION-C

- Q7) Explain instruction cycle. Give the RTL statement for each sub cycle. How the instruction cycle is to accommodate the interrupt from I/O devices?
- Q8) Explain how cache memory is different from virtual memory. Also, discuss various page replacement policies for virtual memory with examples.
- Q9) Write short notes on :
- a) DMA
 - b) Stack organization