**B.Tech. (CSE / IT) (Sem.–3rd)**
# COMPUTER ARCHITECTURE
**Subject Code : CS-201**
**Paper ID : [A0451]**

**Time : 3 Hrs.**                              **Max. Marks : 60**

**INSTRUCTION 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 has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.**

## SECTION-A

**l. Answer briefly** :

(a) What do you mean by superscalar machines ?

(b) How do you distinguish between a PC and a multiprocessor system ?

(c) What do you understand by the term-Transaction processing benchmarks ?

(d) Explain the difference between I/O channel and I/O processor.

(e) Distinguish Computer Architecture and Computer Organization on two most important parameters.

(f) If P = 1101.110 and Q = 1110.1101 both binary perform P – Q by 2's complement method.

(g) What is the difference between programming and microprogramming? Justify with examples.

(h) Explain the role of Interpreter and in which situation we prefer it over compiler.

(i) Explain the concept of popelining.

(j) List the names of important buses used in computer systems .

## SECTION-B

2. What should be the broad category of instruction which any computer system should have ? Explain each with examples. (5)

3. Draw and explain the circuit of Look Ahead carry generator and show how it speeds up processing? (5)

4. Write a detailed note on 8251. (5)

5. What do you know about :

   (a) Cost/benefit concept of layers in Architecture design.

   (b) Memory hierarchy. (5)

6. Explain :

   (a) The concept of parallel & distributed computers.

   (b) List the various memory devices used in computers and discuss the comparison of the important features of these devices. (5)

## SECTION-C

7. (a) What do you understand by hardwired and microprogrammed control units ? Discuss their relative merits and demerits.

   (b) Discuss the features of SIMD and MIMD Machines. (10)

8. List the various I/O data transfer modes/techniques. Explain each of them. Discuss their relative advantages and disadvantages. (10)

9. Write notes on **any two** of the following :

   (a) 8255

   (b) RISC *vs.* CISC

   (c) Virtual Memory

   (d) Multiplication Algorithm for multiplying two binary numbers, each having 4 bits. (10)