SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL NO : | | | | | | | | | | | | | **Total number of pages:[2]**

Total number of questions: 06

B-Tech. CSE/ 3th Sem (RP)

Computer Architecture and Organization

Subject Code: BTCS-301A/301

Paper ID: M/18

(2011 batch onwards)

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

Important Instructions:

- **All questions are compulsory**
- **Assume any missing data**

Part-A (2×10)

Q1) Answer in brief:

(a) Define Virtual Memory?
(b) What is Asynchronous Data transfer?
(c) Define I/O Processor?
(d) What is microprogramming?
(e) Explain the role of Cache Memory?
(f) Differentiate Between RISC and CISC?
(g) Describe micro-operations?
(h) Explain the use of Pipelining?
(i) Differentiate between Static RAM and Dynamic RAM?
(j) A Computer uses RAM chips of 256*8 capacity? How many chips are needed to provide a memory capacity of 2048MB?

Part-B (8×5)

Q2) What do you mean be Computer Organization and Design? How it is useful in Multiprocessor systems? Explain various timing and controls signals used in Computer Systems? (CO1)

OR

What is role of Addressing modes? Explain various Addressing modes used in Computer System Design with suitable examples? (CO1)

Q3) Differentiate between Micro programmed and Hardwired Control Unit? (CO

OR

What are Microinstructions? Explain the format of the control word illustrating the different fields? (CO2)

Q4) What is Priority Interrupt? Explain various modes of data transfer and manipulation operations used in CPU? (CO3)

OR

What is memory management hardware? How Virtual memory is different from cache memory? also discuss various Page replacement policies used in Virtual memory? (CO3)

Q5) What are the instruction formats available in CPU design? Illustrate the influence of number of addresses (zero, one, two & three) on computer programs by writing the set of instructions for following expression:

$X = (A - B) / (C - D)$ (CO4)

OR

Explain Instruction Cycle with the help of suitable diagram? (CO4)

Q6) What are various benefits of Parallel processing? Explain Flynn's classification of Parallel computers? (CO5)

OR

What is Inter process communication? Differentiate between Array Processors and Vector Processors? (CO5)