Roll No. ..... **Total Pages : 02**

BT-4/M-20 **34102**

COMPUTER ARCHITECTURE AND ORGANIZATION

ECE-210-N

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. Explain the transfer of data by four registers using a common bus system. Also explain the three state bus buffers and data transfer using them. **15**

2. (a) Differentiate between RISC and CISC instructions. **7.5**

(b) What is a stack ? Describe the Push and Pop instructions using a memory and register stack. **7.5**

Unit II

3. Write short notes on any *two* of the following :

(a) Address sequencing

(b) Hardwired control unit

(c) CPU control unit. **15**

4. (a) What are Array Processors ? Which parallel processing structure is used to represent an array processors ? Draw the structure also. **7.5**

(b) Which are the three ways of adding decimal numbers ? Draw the structures with complete explanation. **7.5**

Unit III

5. The size of each RAM chip is 128×8 and ROM chip is 512×8. If a computer system needs 512 bytes of RAM and 512 bytes of ROM. Draw the memory address map for the given capacity of a computer system. Also, draw a diagram for memory connection to CPU. **15**

6. (a) Differentiate between SRAM and DRAM. **7.5**

(b) Write a short note on Associative memory. **7.5**

Unit IV

7. What is a pipeline ? List its various types. Discuss the working of an arithmetic pipelining by taking any example. **15**

8. (a) Discuss input-output processor. Also explain the communication between a CPU and IOP by drawing a flowchart. **7.5**

(b) Discuss strobe control and handshaking process in Asynchronous data transfer. **7.5**