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BT-4/M-13 **8401**

COMPUTER ARCHITECTURE AND ORGANIZATION

Paper : CSE-202(E)

Time : Three Hours] [Maximum Marks : 100

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

UNIT–I

1. (a) What is Microprocessor ? Compare and contrast the characteristics of RISC and CISC based processor. 10

   (b) What is Instruction set ? Discuss data transfer instructions of 8086. 10

2. (a) Explain Flynn's Classification of computers. 10

   (b) What do you mean by Computer performance ? Discuss any *two* metrics to measure performance of a computer system. Also, discuss pros and cons of these metrics. 10

UNIT–II

3. (a) Draw a diagram for a data path of a register based CPU, and explain the diagram. 10

   (b) What is Instruction cycle ? Give an example of 5-stage instruction cycle. 10

4. (a) What is the purpose of CU ? Discuss micro-programmed CU. 10

   (b) What is Microinstruction ? Explain sequencing of microinstruction. 10

UNIT–III

5. (a) What is Memory hierarchy ? Discuss the characteristics of memory hierarchy. 10

   (b) Differentiate between SRAM and DRAM. 10

6. (a) How does cache improve performance of a computer system ? Explain Direct-mapped cache organization. What are its limitations ? 10

   (b) Distinguish between Paging and Segmentation. 10

UNIT–IV

7. (a) What is Instruction level parallelism ? Explain the principle of instruction pipelining. 10

   (b) What is Processor level parallelism ? Compare and contrast a Multiprocessor and Multicomputer system. 10

8. Explain the following with respect of 80×86 processors :

   (a) Processor registers. 10

   (b) Interrupts. 10