BT-5/D-22 45244

COMPUTER ORGANIZATION AND ARCHITECTURE
Paper–EC-305A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt any *five* questions.

1. (a) Differentiate between computer organization and computer architecture. Draw a table showing in two columns these differences. (8)

    (b) Describe the meaning of the term micro operation. Briefly discuss the working of arithmetic, logical and shift micro operations. (7)

2. (a) What is a register? What is its role inside a processor? Explain various registers and general register organization. (8)

    (b) Draw the architecture of a central processing unit. Label each unit and briefly explain the working of each part. (7)

3. (a) What are different types of CPU instructions? Give differences between Zero-address and 1-address instructions. (9)

    (b) How does data transfer take place in a computer unit? Discuss various modes. (6)

4. (a) Explain how BCD subtraction takes place. (7)
    (b) Describe the functioning of multiplier control unit. (8)

5. (a) How do you compare various memories in memory hierarchy design? (7)
    (b) Differentiate between cache memory and virtual memory. Describe functions of the two. (8)

6. (a) What is cache memory? What are the issues in its performance? What is the problem of locality of reference and cache coherence? (9)
    (b) What is associative memory? What advantages does it provide? (6)

7. (a) What is pipelining? What advantages does it provide? Differentiate between arithmetic and instruction pipeline. (9)
    (b) What is priority encoder? Draw the truth table of priority encoder. (6)

8. (a) What are the differences between synchronous and asynchronous data transfer? (8)
    (b) Explain in detail programmed I/O and memory-mapped I/O. (7)

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