R19

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MCA I Semester Examinations, October/November - 2022
COMPUTER ORGANIZATION AND ARCHITECTURE

Time: 3 Hours   Max.Marks:75

Answer any five questions
All questions carry equal marks
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1.a)   Explain the various types of computers.
  b)   Explain the hardware implementation of controlled register transfers.   [7+8]

2.a)   Explain arithmetic shift instruction with suitable examples.
  b)   List various memory reference instructions.   [8+7]

3.   Write about address sequencing in micro programmed control and compare it with hardwired control.   [15]

4.a)   Explain major components of central processing unit.
  b)   With suitable example explain instruction formats.   [7+8]

5.a)   Explain in detail BCD adder circuit.
  b)   With a flowchart explain floating point multiplication.   [7+8]

6.a)   How to store different data types in computer? Explain with examples.
  b)   Demonstrate division operation of fixed point numbers.   [8+7]

7.a)   The logical address space in a computer system consists of 128 segments. Each segment can have up to 32 pages of 4K words in each. Physical memory consists of 4K blocks of 4K words in each. Formulate the logical and physical address formats.
  b)   Differentiate between SRAM and DRAM.
  c)   Compare strobe method with hand shaking method for input-output.   [5+5+5]

8.a)   What is pipelining? Discuss pipeline hazards.
  b)   Describe vector processing in RISC pipeline.
  c)   Explain cache coherence protocol for multiprocessor systems.   [5+5+5]

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