

R19**Code No: 861AB****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA I Semester Examinations, July/August - 2021****COMPUTER ORGANIZATION AND ARCHITECTURE****Time: 3 Hours****Max.Marks:75**

Answer any five questions
All questions carry equal marks

- 1.a) With the help of a function table and a circuit block diagram, explain how a 4 - bit arithmetic circuit works.
- b) Give examples for selective-set, selective-compliment and selective-clear operations. [7+8]
2. How can you say that hardwired control unit is faster than micro programmed control unit? Explain with relevant diagram. [15]
- 3.a) Represent -534.72 as signed magnitude, 1's complement, 2's complement numbers.
- b) Explain Booth's algorithm for multiplication. [7+8]
- 4.a) Why page-table is required in a virtual memory system. Explain different ways of organizing a page table.
- b) Explain how cache memory is different from virtual memory. [7+8]
5. Draw the four segment pipeline diagram for floating point addition and subtraction and explain the same. [15]
6. Define an interrupt. What happens during the interrupt cycle? Demonstrate with the help of a flowchart and example. [15]
- 7.a) What are the design goals of control unit?
- b) Compare RISC and CISC instructions. Give their respective advantages and disadvantages. [7+8]
- 8.a) Describe the flowchart for the floating point division operation with an example.
- b) Explain arithmetic overflow and divide overflow with some examples for 2's complement numbers. [7+8]

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