R19

Code No: 861AB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MCA I Semester Examinations, October/ November - 2020
COMPUTER ORGANIZATION AND ARCHITECTURE

Time: 2 Hours **Max.Marks:75**

Answer any five questions
All questions carry equal marks

1.a) Draw a 4-bit adder-subtractor circuit diagram and explain its functional description.
b) Give the Register Transfer Level (RTL) statements for Push and Pop operations. [7+8]

2. With suitable block diagram, explain the working of a micro programmed sequencer. [15]

3.a) Represent -424.19 as signed magnitude, 1's complement, 2's complement numbers.
b) Draw a flow chart to explain floating point multiplication with an example. [7+8]

4.a) Explain DMA based data transfer. Give the respective block diagram of it.
b) Compare isolated I/O and memory-mapped I/O. [7+8]

5.a) What are the characteristics of a Multiprocessors?
b) Discuss about serial arbitration and parallel arbitration with relevant diagrams. [7+8]

6. List and explain various memory-reference and register-reference instructions with clear examples. [15]

7.a) What is the role of symbolic microprogram and binary microprogram in micro programmed control?
b) Give an example to illustrate zero-address, one-address and two-address instructions. [7+8]

8.a) Multiply 10111 with 10011 using Booth's algorithm.
b) Describe the hardware for signed 2's complement addition and subtraction? [7+8]

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