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Code No: 841AB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MCA I Semester Examinations, July/August - 2021
COMPUTER ORGANIZATION

Time: 3 Hours **Max.Marks:75**

Answer any five questions
All questions carry equal marks

1.a) Apply Booth's algorithm to multiply 10101 with 10010.
b) Convert the following numbers decimal numbers to binary and octal:
i) 2315 ii) 517 [7+8]

2. Draw the block diagram of content addressable memory and explain the logic of read and write operations. [15]

3.a) Give an example for illustrating Indexed and Base register addressing modes.
b) Explain various arithmetic instructions of 8086 processor. [7+8]

4. Describe the functionality and need of DMA controller. [15]

5. Draw the four-segment instruction pipeline flowchart and timing diagram. Explain the same. [15]

6. Depict the flowchart for adding and subtracting numbers in signed-2's complement notation and explain the same with an example. [15]

7.a) What is the need of cache memory? Explain its characteristics.
b) Consider a 2-way set associative cache with 64 blocks and a block size of 16 bytes. To which set number does byte address 1200 map? [7+8]

8. List and explain various interrupts and process control instructions with examples for each. [15]

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