BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: BTECH
BRANCH: CSE/IT

SEMESTER: IV
SESSION : SP/2020

SUBJECT : CS203 COMPUTER ORGANIZATION ARCHITECTURE

TIME: 2 HOURS

FULL MARKS: 25

INSTRUCTIONS:
1. The total marks of the questions are 25.
2. Candidates may attempt for all 25 marks.
3. Before attempting the question paper, be sure that you have got the correct question paper.
4. The missing data, if any, may be assumed suitably.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

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Q1	(a)	Differentiate between Computer Organization and Architecture.	[2]	CO1
Q1	(b)	Explain the functioning of IR, MAR, MDR registers present in CPU.	[3]	CO1
Q2	(a)	Define ranges of 'n' bit binary numbers in Unsigned, Sighed-Magnitude, 1's Complement and 2's complement representation of numbers.	[2]	CO3
Q2	(b)	i) Perform following operations in 2's complement representation of binary numbers: (+7) + (-3) and (-3) - (-7) ii) Convert number $(712)_8$ to ( )$_6$	[3]	CO3
Q3	(a)	Write algorithm for multiplication of positive binary numbers with example.	[2]	CO2
Q3	(b)	Draw and explain the sequential circuit of binary multiplier.	[3]	CO4
Q4	(a)	What do you mean by immediate addressing mode? Explain with example	[2]	CO2
Q4	(b)	An instruction is stored at the location 300 with its address field at location 301. The address field has the value 400. A processor register R1 contains the number 200. Evaluate the effective address if the addressing mode of the instruction is (i) Direct, (ii) Immediate and (iii) Relative	[3]	CO3
Q5	(a)	What do you mean by zero and one addressing formats of codes?	[2]	CO2
Q5	(b)	Write code in zero and one addressing format for the expression x = (a+b)/(c*t)	[3]	CO3

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