

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

CLASS: B.Tech
BRANCH: CS/IT

SEMESTER: 3rd
SESSION: MO/2022

SUBJECT: CS235 COMPUTER ORGANIZATION & ARCH

TIME: 2 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 25.
 2. Candidates 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) Describe the Von-Neumann Architecture.	[2]	1	2
Q1	(b) Differentiate between Computer Architecture and Organization. Out of CA and CO, which one has undergone more change with respect to time? What may be reason for this?	[3]	1,5	4
Q2	(a) State the parameters which affect the performance of a computer.	[2]	5	1,2
Q2	(b) With the suitable diagram explain the internal structure of CPU with control signals.	[3]	2	2
Q3	(a) A processor chip is used for application in which 25% of execution time is spent on floating point addition. For the new model of processor, the design team has redesigned the floating point adder to make it thrice as fast. Calculate the speedup for adder redesign.	[2]	5	3
Q3	(b) Show the IEEE 754 binary representation of the number $(12.125)_{10}$ in single precision.	[3]	3	3
Q4	(a) What is instruction sequencing? What is difference between Big-endian and little-endian representation.	[2]	2,3	2
Q4	(b) Multiply using Booth's Multiplication algorithm: 7X-5	[3]	3	5
Q5	Define Addressing Modes. With proper example show the operations performed by different Addressing Modes.	[5]	1,2	2

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