JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATION-FEBRUARY-2026

B.Tech- IVth Semester (CSE/IT)

COURSE CODE (CREDITS): 18B11CI514 (3) MAX. MARKS: 15

COURSE NAME: Computer Organization and Architecture MAX. TIME: 1 Hour

COURSE INSTRUCTORs: EMP

Note: *(a) All questions are compulsory. (b) The candidate is allowed to make suitable numeric assumptions wherever required for solving problems.(c) Use of calculator is not allowed.*

Q. No	Question	CO	Marks
Q1	Classify computers based on their size and processing capabilities. Give one example for each category.	CO-1	2
Q2	What are the different types of bus structures in a computer system? Explain the function of the address bus and control bus with reference to computer registers and memory.	CO-1	2
Q3	Analyze the evolution from the second to the fifth generation of computers, focusing on technological advancements in hardware and their implications for performance and scalability.	CO-1	3
Q4	Draw a neat sketch and critically evaluate the Von-Neumann architecture, including its bottleneck. Compare it with Harvard architecture in terms of memory access, instruction execution speed, and suitability for modern embedded systems.	CO-1	3
Q5	(a) List the registers available in Mano's Basic Computer and describe their functions. (b) With a sketch, explain the general instruction format of Mano's Basic Computer. How does this format differ for Direct Memory-Reference, Indirect Memory-Reference and Register-Reference?	CO-2	5

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