Graphic Era HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

Term Evaluation (Even) Semester Examination March 2025

Roll no.....

Name of the Course: BCA
Semester: 4th
Name of the Paper: Computer Organization
Paper Code: TBC 403
Time: 1.5-hour **Maximum Marks: 50**

Note:
(i) Answer all the questions by choosing any one of the sub-questions
(ii) Each question carries 10 marks.

Q1. CO1.....(10 Marks)
a. Define computer organization and architecture. Explain the following key blocks of Computer Architecture-
1. Central Processing Unit (CPU).
2. Peripherals

OR

b. Draw and explain the block diagram of Von Neumann Architecture and define Von Neumann bottleneck.

Q2. C01.....(10 Marks)
a. With a neat diagram, explain the Address, Data and Control Bus in CPU.

OR

b. Describe the key technology and characteristics of 4th and 5th generations of computers.

Q3. C02.....(10 Marks)
a. Draw and explain the flowchart of instruction cycle of a Central Processing Unit (CPU).

OR

b. Solve the following problems-
1. A CPU has a clock speed of 3.2 GHz and executes 10 instructions per clock cycle. Calculate the number of instructions executed per second (IPS).
2. A hard disk drive has a data transfer rate of 150 MB/s. Calculate the time required to transfer 3 GB of data.

Q4. C02.....(10 Marks)
a. Explain the working of Three Bus Organization of data path along with diagram.

OR

b. Describe the roles of the Arithmetic Logic Unit (ALU) and the Control Unit (CU) in a CPU. Explain how they interact during the execution of a simple addition operation.

Q5. C02.....(10 Marks)
a. Draw and explain the Micro programmable Control unit with one- level and two-level control store.

OR

b. Describe the arithmetic and logic operations that can be performed by a CPU. Provide examples of instructions for addition, subtraction, AND, OR, and NOT operations.