Graphic Era HILL UNIVERSITY

Term Evaluation (Even) Semester Examination March 2025

Roll no.....

Name of the Course: Diploma CSE
Semester: IV
Name of the Paper: Computer Architecture and Maintenance
Paper Code: DTCS 401
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. (10 Marks)

a. Describe the North Bridge and South bridge architecture in a chipset with suitable diagram. (CO1)

OR

b. Explain the architecture and key features of Intel chipsets 915G and 945G. Evaluate their impact on system performance and efficiency. (CO1)

Q2. (10 Marks)

a. Describe the servo techniques used in hard disks, including Wedge Servo, Embedded Servo, and Dedicated Servo, and explain their respective functions. (CO2)

OR

b. Analyze the role of BIOS in a computer system. How does it interact with hardware components to initialize the system? (CO1)

Q3. (10 Marks)

a. Design a memory hierarchy model for a computing system. Justify the role of each memory in optimizing performance (CO1)

OR

b. Define disk formatting and distinguish between Low-Level Formatting, High-Level Formatting, and Partitioning, highlighting their purposes.? (CO2)

Q4. (10 Marks)

a. Explain the different recording techniques used in storage devices, including FM, MFM, RLL, and Perpendicular Magnetic Recording. How do these techniques impact data storage efficiency? (CO2)

OR

b. Define and provide a diagrammatic structure of following hard disk terms: (CO2)
   1. Track
   2. Sector
   3. Cylinder
   4. Cluster
   5. MBR

Q5. (10 Marks)

a. Explain Cache Memory in detail and provide difference between L1, L2 and L3 cache memory. (CO1)

OR

b. Compare the features of FAT16, FAT32, and NTFS file systems. How does the choice of file system affect disk performance and data management? (CO2)