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 Theory (Odd)-(Late/Lateral Admission) Exam Nov. 2025

Roll no.....

Name of the Course and semester: **MCA / MCA (AI/DS) 1ST**
Name of the Paper: **ADVANCED OPERATING SYSTEMS**
Paper Code: **TMC 104/TMD 105**
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.
(iii) Please specify COs against each question.

Q1. (10 Marks)

a. Define an operating system. Also explain the layered architecture of an operating system. (CO1)

OR

b. Calculate Average waiting time, Average TAT, throughput, CPU utilization using FCFS for the following: (CO1)

Process	Arrival Time	CPU Burst Time (in millisec.)
P0	3	2
P1	2	4
P2	0	6
P3	1	4

Q2. (10 Marks)
(10 Marks)

a. Explain the various file systems used in different operating systems. (CO1)

OR

b. Write a short note on Access Control. Also explain the access permissions available in LINUX. (CO1)

Q3. (10 Marks)

a. What do you understand by kernel of an OS. Also explain the different types kernels. (CO1)

OR

b. Explain the different types of attributes and operations related to files. (CO1)

Q4. (10 Marks)

a. Write a short note of (i) SVR3,(ii) Domain of protection. (CO2)

OR

b. Write a short note on (i) non-preemptive (ii) Preemptive

Q5. a. Consider the following set of processes with their arrival and burst times. Use Round Robin Scheduling with a Time Quantum = 2 units to calculate: Completion Time (CT), , Turnaround Time (TAT), Waiting Time (WT), Draw the Gantt Chart

(CO2) (10 Marks)

Process	Arrival Time	Burst Time
P1	0	5
P2	1	4
P3	2	2
P4	3	1

OR

b. Differentiate between (i) Multiprogramming and Multitasking Operating Systems
(ii) Kernel and Shell (CO1)