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. 2492113

Name of the Course and semester: BCA - II
Name of the Paper: Introduction to Operating System
Paper Code: TBC-203

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. Differentiate Batch Processing Operating System and Multiprogramming Operating System. CO1

OR

b. Explain dual-mode operating in Operating System with a neat block diagram. CO1

Q2. (10 Marks)

a. What is the average waiting time and average turn around time of all processes for FCFS, SJF algorithm? CO2

Processes	Burst Time	Arrival
P1	10	3
P2	1	1
P3	2	0
P4	1	4
P5	5	2

OR

b. Differentiate "kernel" and Shell" in at least 10 points. CO1

Q3. (10 Marks)

a. Consider the set of 5 processes whose arrival time and burst time are given below: CO2

Process Id	Arrival time	Burst time
P1	3	1
P2	1	4
P3	4	2
P4	0	6

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P5	2	3

If the CPU scheduling policy is SJF, calculate the average waiting time and average turnaround time.

OR

b. Define the term deadlock. Explain various necessary conditions for a deadlock to occur. Explain in brief about deadlock prevention. CO2

Q4 (10 Marks)

a. Define the following : CO2
   i. PCB
   ii. Threshold
   iii. System Call
   iv. Multi-Programming OS
   v. Frame

OR

b. Define How 'UNIX" operating system works in detail. CO1

Q5. (10 Marks)

a. Define the functions of Operating System in detail. CO2

OR

b. Define the following : CO3
   i. Race Condition
   ii. Starvation
   iii. Critical Section
   iv. Mutual Exclusion
   v. Deadlock Avoidance