Programme: B.E – CSE (AI&ML) and CSE(CS)

Internal Assessment – II

TERM:15-APR-2024 to 27-JUL-2024	**COURSE NAME:** OPERATING SYSTEMS
DATE: 22/07/2024 **TIME:** 9:30 to 10:30am	**COURSE CODE**: CI45/CY45
MAX MARKS: 30	**PORTIONS:** L20-L42
SEMESTER:4th SEM	**SECTION: A**


Mobile Phones are banned

Instructions to Candidates: **Answer any TWO full questions.** Marks: **15x2=30**

Q. NO	Questions	Blooms Levels	CO	Marks
1.a	Describe the mechanism incorporated for deadlock prevention.	L2	CO4	7
b	Improper usage of semaphores leads to starvation and deadlock. justify with suitable examples.	L3	CO3	8
2.a	Explain Banker's algorithm for deadlock avoidance.	L2	CO4	5
b	Describe the role of access matrix maintained by operating system to ensure protection.	L2	CO5	5
c	A disk contains 200 tracks numbered from 0 to 199 and the request queue contains track number 82,170,43,140,24,16,190 respectively. If the current position of read/write head is at track number 50 then calculate the total number of track movements using FCFS, SCAN scheduling policies (Assume the direction is towards smaller value).	L3	CO2	5
3.a	Describe different file types along with their extensions.	L2	CO5	5
b	Consider the Pages referenced by the CPU in the order 6, 7, 8, 9, 6, 7, 1, 6, 7, 8, 9, 1 assume there are three free frames on main memory calculate the number of page faults using FIFO, LRU and optimal page replacement algorithms.	L3	CO4	5
c.	Describe producer consumer problem and propose the solution to solve critical section problem between producer and consumer using semaphores.	L3	CO3	5

* **L1** – Remember, **L2** – Understand, **L3**- Apply, **L4**- Analyze, **L5**-Evaluate, **L6**-Create