R22 Regulation *Subject code: 4O8DB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VIII Semester Regular Examinations, May 2026

OPERATING SYSTEMS

(ECE)

Maximum Marks: 60 Date:12.05.2026 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10×1M=10 Marks)		Marks	CO	BTL
1.a)	What is system view of OS?	1	1	L1
b)	What is dual mode operation?	1	1	L1
c)	What is scheduling?	1	2	L2
d)	Define fork().	1	2	L1
e)	What is Peterson's solution?	1	3	L1
f)	List conditions for deadlock.	1	3	L2
g)	What is a page fault?	1	4	L1
h)	What is Optimal page replacement?	1	4	L2
i)	What is contiguous allocation?	1	5	L1
j)	Define revocation of access rights.	1	5	L2

Part-B

Answer All the following questions. (5×10M=50Marks)		Marks	CO	BTL
2	a) Explain the objectives of an Operating System in detail.	5	1	L1
	b) Differentiate between User View and System View of an Operating System. Explain with suitable examples.	5	1	L2
	OR			
3	a) Explain how an Operating System handles interrupts and system calls.	5	1	L3
	b) Explain different protection mechanisms used in Operating Systems.	5	1	L2
4	a) Describe the process state transition model and explain each state in detail.	5	2	L3
	b) Describe different types of threads (user-level and kernel-level) with examples.	5	2	L2
	OR			
5	a) Compare First-Come First-Served (FCFS) and Shortest Job First (SJF) scheduling algorithms.	5	2	L3
	b) Evaluate different CPU scheduling algorithms based on scheduling criteria.	5	2	L3

6	a) Explain the critical section problem and its requirements in detail.	5	3	L2
	b) Explain semaphores and their types with examples.	5	3	L2
	OR			
7	a) Explain the Producer–Consumer problem using semaphores.	5	3	L2
	b) Explain monitors and how they are used for process synchronization.	5	3	L2
8	a) Explain the concept of swapping with advantages and disadvantages.	5	4	L2
	b) Explain paging with neat diagram and address translation.	5	4	L2
	OR			
9	a) Explain the structure of page table.	5	4	L2
	b) Describe demand paging with page fault handling steps.	5	4	L2
10	a) Discuss different file access methods.	5	5	L3
	b) Discuss directory implementation methods.	5	5	L3
	OR			
11	a) Discuss implementation of access matrix.	5	5	L3
	b) Explain principles of protection.	5	5	L2