R20 Regulation *Subject code: 3P3EF*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, December 2025

OPERATING SYSTEMS

(Common to CSE, CSE(AI&ML) & CSE (DS))

Maximum Marks: 70 Date: 27.12.2025 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 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 (10X2M=20 Marks)		Marks	CO	BTL
1	List out operating system services.	2M	1	L1
2	Define distributed operating system.	2M	1	L1
3	What are the different types of scheduling queues?	2M	2	L1
4	Define entry section and exit section.	2M	2	L1
5	What are the memory management strategies?	2M	3	L1
6	Write the conditions under which a deadlock situation may arise?	2M	3	L1
7	Define page fault.	2M	4	L1
8	List the file attributes.	2M	4	L1
9	What is indexed allocation?	2M	5	L1
10	What is free space list?	2M	5	L1
	Part-B			
Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	a) Explain about multiprogramming and time-sharing operating system. b) What are the various objectives and functions of Operating systems?	5M 5M	1	L2
	OR			
12	a) What is system calls in OS? Explain in detail with its types. b) Describe about user interface.	5M 5M	1	L2
13	Explain Round Robin scheduling algorithm with example.	10M	2	L2
	OR			
14	What is the important feature of critical section? State the Readers Writers problem and give solution using semaphore.	10M	2	L2
15	a) Distinguish between internal and external fragmentation. b) Discuss paging and structure of page table in detail.	5M 5M	3	L2
	OR			
16	Explain the various methods which we apply for recovery from deadlocks.	10M	3	L2

17	a)Write a short note on performance of demand paging. b) Consider the page reference string. 7,0,1,2,0,3,0,4,2,3,0,3,2,3 with 4 page frames. Find the number of page faults using FIFO page replacement algorithm.	5M 5M	4	L2
	OR			
18	a) Explain different system calls for file operations. b) Briefly explain about file access methods.	5M 5M	4	L2
19	a) List the different file system allocation methods. b) Explain the concept of goals of protection.	5M 5M	5	L2
	OR			
20	a) What is the linked list allocation file implementation technique? b) State the Access metrics mechanism.	5M 5M	5	L2