R20 Regulation *Subject code: 3O7DD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VII Semester Supplementary Examinations, May 2026

OPERATING SYSTEMS

(ECE)

Maximum Marks: 70 Date: 13.05.2026 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	Define Operating system	2M	1	L1
2	What do you mean by a System Call?	2M	1	L1
3	What is a Process?	2M	2	L1
4	What is Independent process?	2M	2	L1
5	Define Deadlock.	2M	3	L1
6	Define Rollback in deadlock recovery.	2M	3	L1
7	Define Lazy swapper.	2M	4	L1
8	What is a Page Fault?	2M	4	L1
9	What is Sequential access method of files?	2M	5	L1
10	What are the various file accessing methods?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Categorize the various types of system calls in Operating system and explain with examples.	10M	1	L2
	OR			
12	Explain the services of Operating system in detail.	10M	1	L2
13	a) Inspect the scheduling criteria for evaluating the CPU scheduling algorithm? b) Explain the FCFS scheduling algorithm with example.	5M 5M	2	L2
	OR			
14	Consider the following set of processes with the length of the CPU burst time given in milliseconds. Process Burst time P1 24 P2 3 P3 3 The processes are assumed to have arrived in the order p1, p2, p3 all at time 0. Draw Gantt charts illustrating the execution of these processes using Round Robin scheduling. (quantum=4 milliseconds).	10M	2	L2

15	a) Inspect the necessary conditions for a deadlock situation to arise. b) Analyze the ways to be followed to prevent deadlock.	5M 5M	3	L2
	OR			
16	What is Memory Allocation? Discuss in detail Contiguous Memory Allocation.	10M	3	L2
17	Consider the following page reference string 7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1 Assuming three frames, compare how many page faults would occur in each of the following cases? i) FIFO ii) Optimal iii) LRU	10M	4	L2
	OR			
18	Examine the concept and performance of demand paging.	10M	4	L2
19	Contrast the approaches of how free space is managed by operating system.	10M	5	L2
	OR			
20	Analyze the following with relevant diagrams: a) Single level directory structure b) Tree structured directory structure	5M 5M	5	L2