R20 Regulation *Subject code: 3O7BA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VII Semester Supplementary Examinations, May 2026

OPERATING SYSTEMS

(EEE)

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	10M	2	L2

	Robin scheduling. (quantum=4 milliseconds)			
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