R20 Regulation *Subject code:3O7BA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VII Semester Supplementary Examinations, October 2026

OPERATING SYSTEMS

(EEE)

Maximum Marks: 70 Date: 30.10.2026 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	What are the two main purposes of an operating system?	2M	1	L1
2	How does an interrupt differ from a trap?	2M	1	L1
3	Specify about preemptive and non-preemptive.	2M	2	L1
4	Define fault tolerance.	2M	2	L1
5	What is the use of Valid-Invalid Bits in paging?	2M	3	L1
6	What do you mean by Thrashing?	2M	3	L1
7	Differentiate Growing Phase and Shrinking Phase.	2M	4	L1
8	List any four file attributes	2M	4	L1
9	Summarize the functions of DMA.	2M	5	L1
10	What is bootstrap program?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Explain operating system services and functionalities.	10M	1	L2
	OR			
12	What are some challenges associated with operating systems for parallel and distributed systems?	10M	1	L2
13	Describe one scenario in which interprocess communication is required between cooperating processes.	10M	2	L2
	OR			
14	Describe the concept of memory swapping. When and why is it used in memory management? What are the drawbacks of swapping?	10M	2	L2
15	Analyze the methods of handling deadlocks by prevention, avoidance, detection and recovery	10M	3	L2
	OR			
16	Define the concept of segmentation. Explain the limitations of pure paging and pure segmentation?	10M	3	L2

17	Discuss interprocess communication mechanisms. Compare and contrast IPC between processes on a single computer system with IPC between processes on different systems.	10M	4	L2
	OR			
18	Explain any three page replacement algorithm with an example. Compare your algorithm with respect to page faults.	10M	4	L2
19	Explain the role of the "open," "create," "read," "write," & "close," system calls in a file system.	10M	5	L2
	OR			
20	Elaborate on the implementation of Access Matrix, Access Control and Access Rights revocation	10M	5	L2