



R22 Regulation

Subject code:406BD

**TKR COLLEGE OF ENGINEERING AND TECHNOLOGY**

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

**B.Tech VI Semester Supplementary Examinations, November 2025**

**OPERATING SYSTEMS**

(EEE)

Maximum Marks: 60

Date:15.11.2025

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 (10X1M=10 Marks)		Marks	CO	Bloom Tx
1.a)	Write any two the objectives of operating system.	1M	CO1	BT1
b)	List the services provided by an Operating System.	1M	CO1	BT1
c)	What are the 3 different types of scheduling queues?	1M	CO2	BT1
d)	How real-time Scheduling does differ from normal scheduling?	1M	CO2	BT2
e)	Write any two classical synchronization problems.	1M	CO3	BT1
f)	Specify the steps involved during recovery from deadlock.	1M	CO3	BT1
g)	What is paging.	1M	CO4	BT2
h)	Mention the benefits of virtual memory techniques.	1M	CO4	BT2
i)	List the various File Attributes.	1M	CO5	BT1
j)	What are the most common schemes for defining the Logical Structure of a Directory?	1M	CO5	BT1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	Bloom Tx										
2	a) What are the major activities of an operating systems with regard to process management? b) Explain the User Operating-System Interface in detail.	5M 5M	CO1	BT2										
OR														
3	a) Discuss the concept of memory management in operating systems. b) Give an account of different types of System calls.	5M 5M	CO1	BT2										
4	a) Explain about different multithreading models. b) Illustrate the Process Scheduling concepts in OS.	5M 5M	CO2	BT2										
OR														
5	a) Describe the scheduling criteria. b) Evaluate FCFS CPU Scheduling algorithm for given Problem	4M 6M	CO2	BT3										
<table border="1"> <thead> <tr> <th>Process</th> <th>P1</th> <th>P2</th> <th>P3</th> <th>P4</th> </tr> </thead> <tbody> <tr> <td>Process Time</td> <td>24</td> <td>3</td> <td>5</td> <td>6</td> </tr> </tbody> </table>		Process	P1	P2	P3	P4	Process Time	24	3	5	6			
Process	P1	P2	P3	P4										
Process Time	24	3	5	6										
6	Define process synchronization and explain Peterson solution algorithms.	10M	CO3	BT2										

	OR			
7	a) Explain the Banker algorithm for deadlock avoidance in detail. b) Explain the RAG representation in deadlock detection.	5M 5M	CO3	BT2
8	a) What is contiguous memory allocation? Write a brief note on the same. b) Describe the Structure of page table.	5M 5M	CO4	BT2
	OR			
9	Given page reference string: 1,2,3,2,1,5,2,1,6,2,5,6,3,1,3,6,1,2,4,3. Compare the number of page faults for LRU, FIFO and Optimal page replacement algorithm.	10M	CO4	BT4
10	Present a detailed note on the File System Allocation methods with neat diagram.	10M	CO5	BT2
	OR			
11	a) Explain the implementation of access matrix. b) Explain about Access Control List with Example.	5M 5M	CO5	BT2