



R22 Regulation

Subject code: 406BD

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Regular Examinations, May 2025

OPERATING SYSTEMS

(EEE)

Maximum Marks: 60

Date: 25.06.2025

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)	What is an Operating system?	1M	CO1	L1
b)	What is meant by Time-sharing Systems?	1M	CO1	L1
c)	What is meant by the state of the process?	1M	CO2	L1
d)	Define schedulers.	1M	CO2	L1
e)	What is Semaphores?	1M	CO3	L1
f)	Define deadlock.	1M	CO3	L1
g)	Define Page Table.	1M	CO4	L1
h)	What is Thrashing?	1M	CO4	L1
i)	What are the various operations performed in a File?	1M	CO5	L2
j)	What is meant by Free Space List?	1M	CO5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	Bloom Tx															
2	Explain different operations performed by the operating system.	10M	CO1	L3															
OR																			
3	Explain briefly different types of System calls.	10M	CO1	L3															
4	Explain CPU Scheduling Algorithms with examples.	10M	CO2																
OR																			
5	Evaluate SJF CPU Scheduling algorithm for given Problem.	10M	CO2	L5															
	<table border="1" style="width: 100%; text-align: center;"> <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>8</td> <td>4</td> <td>9</td> <td>5</td> </tr> <tr> <td>Arrival Time</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> </tbody> </table>				Process	P1	P2	P3	P4	Process Time	8	4	9	5	Arrival Time	0	1	2	3
Process	P1				P2	P3	P4												
Process Time	8	4	9	5															
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6	What is critical section problem and explain with example?	10M	CO3	L1															
OR																			
7	Explain Dead lock detection (Banker's Algorithm) with example.	10M	CO3	L2															

8	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	L3
	OR			
9	Explain the different Disk scheduling algorithms with their comparisons.	10M	CO4	L2
10	Write about different types of operation performed on file?	10M	CO5	L1
	OR			
11	Explain about bit vector and Linked list free space management Technique.	10M	CO5	L3