Regulation R20 *Subject code:3O7BA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VII Semester Supplementary Examinations, December 2024

OPERATING SYSTEM

(EEE)

Maximum Marks: 70 Date:02.01.2025 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. Total 10 questions it consists.
4. Part-B 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)

1	What are the two main purposes of an operating system?
2	What is an interrupt?
3	Write the use of fork and exec system calls?
4	Define fault tolerance.
5	What is the use of Valid-Invalid Bits in paging?
6	Define Semaphore.
7	Differentiate Growing Phase and Shrinking Phase.
8	What is mean by Access control?
9	Write the terms file and file path.
10	What is mean by Access control?

Part-B

Answer All the following questions. (5X10M=50Marks)

11	Explain operating system services and functionalities [10M]	
	OR	
12	Categorize the various types of system calls and explain with examples[10M]	
13	Consider the following set of processes, with the length of the CPU burst time in given ms: [10M]	

Process	P1	P2	P3	P4	P5
Burst Time	8	4	9	5	3
Arrival Time	0	1	2	3	4
Priority	2	1	2	1	3

Draw Gantt charts illustrating the execution of these processes using FCFS, SJF, Priority and RR(Quantum=2ms) scheduling. Also calculate average waiting time and average turnaround time for each scheduling algorithms.

	OR
14	a) Explain various Processing Scheduling algorithms. [5M] b) Explain in detail about the solutions on classical problem synchronization[5M]
15	Analyze the methods of handling deadlocks by prevention, avoidance, detection and recovery [10M]
	OR

16	Explain about Petersons Solution with an algorithm.	[10M]
17	Explain various page replacement algorithms with examples and evaluate them.	[10M]
	OR	
18	Explain the role of the "open," "lseek" "stat" "ioctl" & "close," system calls in a file system.	[10M]
19	Illustrate the File system Implementation and Free space management	[10M]
	OR	
20	Explain about File System Mechanism in detail	[10M]