R20 Regulation *Subject code:3P3FD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, December 2024

OPERATING SYSTEM

(Information Technology)

Maximum Marks: 70 Date:13.12.2024 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 which carries 10M.
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)		CO	Bloom Tx
1	What is an operating system?	1	L1
2	What do you mean by system call?	1	L1
3	What is a process?	2	L1
4	What is the role of dispatcher?	2	L1
5	Differentiate between logical virtual and physical address	3	L1
6	What do you mean by Best fit?	3	L1
7	What are the operations that can be performed on a directory?	4	L1
8	What is a file?	4	L1
9	What is deadlock?	5	L1
10	Write about goals of protection?	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	A. Explain briefly about system calls. How system call are used with an example? [5M] B. Explain different operations performed by the operating system. [5M]	1	L2
	OR		
12	A. Describe operating system structure in detail. [5M] B. Discuss about system programs. [5M]	1	L2
13	Consider the set of processes with arrival time, CPU burst time in milliseconds. solve average turnaround time and average waiting time By using priority scheduling algorithm (Preemptive). Here lowest number represents highest priority. [10M]	2	L3

Process	Arrival Time	Burst Time	Priority
P0	0	10	5
P1	1	6	4
P2	3	2	2
P3	5	4	0

	OR		

14	Explain the concept of semaphores. Illustrate with an example. [10M]	2	L2
15	Explain the common techniques for structuring the page table. [10M]	3	L2
	OR		
16	Given page reference string with 4 frames: [10M] 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6 Compare the number of page faults for LRU, FIFO and optimal page replacement algorithm.	3	L2
17	A. What is directory? Write short note on directory implementation [5M] B. Explain about linked allocation method of a file [5M]	4	L2
	OR		
18	A. Explain about file attributes and operations in file management. [5M] B. Explain about sequential and direct access methods. [5M]	4	L2
19	A. Explain about deadlock characterization [5M] B. What are the different methods for handling deadlocks? [5M]	5	L2
	OR		
20	What is access matrix? What are various methods to implement it? [10M]	5	L2