Regulation R20 *Subject code:3P3FD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B. Tech III Semester Supplementary Examinations, July 2022

OPERATING SYSTEMS

(Information Technology)

Maximum Marks: 70 Date:01.08.2022 **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)

1 List the advantages of multiprocessor systems.
2 Define kernel and its functions.
3 Define long term scheduler.
4 Define thread.
5 List the necessary conditions for deadlock occurrence.
6 State the "best fit" strategy.
7 Define virtual address space.
8 What is meant by Text File?
9 Define file mounting.
10 Why do we use access matrix?

Part-B

Answer All the following questions. (10MX 5=50Marks)

11 Explain the following: [5+5]
a) process management b) Memory management

OR

12 Define system calls and explain different types of system calls. [10]

13 Explain Monitors. [10]

OR

14 Explain the following scheduling algorithms with suitable examples. [5+5]
a) SJF(shortest job first) b) Priority Scheduling

15 Consider the following snapshot of a system

PROCESS	ALLOCATION			*MAX*			AVAILABLE		
	A	B	C	*A*	*B*	*C*	A	B	C
P1	0	1	0	*7*	*5*	*3*	3	3	2
P2	2	0	0	*3*	*2*	*2*			
P3	3	0	2	*9*	*0*	*2*			
P4	2	1	1	*2*	*2*	*2*			
P5	0	0	2	*4*	*3*	*3*			

And answer the following Questions

a) compute the need matrix. [4]

b) Is the system in a safe state? [2]

c) If a request from process P1 arrives for(1,0,2), can the request be granted immediately? [4]

OR

16 write a short note on: [5+5]

a) hierarchical paging b) hashed page table

17 a) Illustrate the concept of copy on write.

b) Explain the concept of virtual memory on windows. [5+5]

OR

18 Discuss following system calls for file operations: [10]

a) Open()
b) Read()
c) Write()
d) Close()
e) Seek()

19 Explain free space management in detail. [10]

OR

20 a) What is the linked list allocation file implementation technique?

b) State the Access metrics mechanism. [5+5]