R17 Regulation *Subject code:* 1P4EC

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech II Year II Semester Supplementary Examinations, July 2021

OPERATING SYSTEMS

(CSE)

Maximum Marks: 70 Date:20.07.2021 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)**

1 Distinguish between symmetric and asymmetric multi processor systems.
2 Explain storage management.
3 What is a dispatcher process?
4 How are processes managed in LINUX?
5 What is the difference between page and segment?
6 What do you mean by Thrashing?
7 Define three blocking methods.
8 Draw the Structure of a Disk.
9 What is critical section problem.
10 Describe System model in detail.

Part-B

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

11 a) What is the relationship between a guest operating system and a host operating system in a system like VMware? What factors need to be considered?
b) Define Essential properties of Distributed Operating Systems. [5+5]

OR

12 a) Explain briefly about virtual machines and micro Kernels.
b) Define operating system goals from user's view and system's view. [5+5]

13 Following is the snapshot of a CPU

Process	CPU Burst	Arrival Time
P1	75	0
P2	40	10
P3	25	10
P4	20	80
P5	45	85

Draw the Gantt chart and calculate the turnaround time and waiting time of the jobs for FCFS (First Come First Served), SJF (Shortest Job First), SRTF (Shortest Remaining Time First) and RR (Round Robin with time quantum 15) scheduling algorithms. [10]

OR

14 Explain about multiple-processor scheduling and real time scheduling. [10]
15 Explain the common techniques for structuring the page table. [10]

OR

16 a) A process refers to 5 pages, A, B, C, D, and E in the order- A; B; C; D; A; B; E; A; B; C; D; E. If the page replacement algorithm is LRU, calculate the number of page faults with empty frames of size 4?
b) Explain the terms in Memory Partitioning with examples:
i) Fixed Partitioning ii) Dynamic partitioning. [5+5]

17 a) Explain any two methods used to protect user files with examples.
b) Discuss the log structured file system implementation. [5+5]

OR

18 Explain in detail about different file allocation methods. [10]

19 List the conditions that must be present for deadlock to occur and for each condition give brief example or reason that illustrate a disadvantage in preventing the condition. [10]

OR

20 a) Explain about capability based systems.
b) Discuss about revocation of access rights. [5+5]