H.T No: | | | | | | | | | | | **R18** **Course Code: A30516**

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech IV Semester Regular/Supplementary Examinations June/July-2022

Course Name: OPERATING SYSTEM

(Common for CSC & CSM)

Date: 04.07.2022 AN **Time: 3 hours** **Max.Marks: 70**

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks. **10x2=20M**

1.	Explain difference between kernel mode and user mode.	2 M
2.	Compare multiprocessing and multi-processor systems.	2 M
3.	Differentiate between thread and process.	2 M
4.	List the three schedulers used by an OS.	2 M
5.	Define safe and unsafe states in deadlocks.	2 M
6.	What is critical section problem?	2 M
7.	Define Demand paging.	2 M
8.	Compare logical address and physical address in memory.	2 M
9.	List some system calls associated with files.	2 M
10.	Define contiguous memory allocation.	2 M

PART-B

Answer the following.Each question carries TEN Marks. **5x10=50M**

11.A). Describe briefly about 10M
i) Time sharing systems
ii) Real time systems
iii) Distributed systems

OR

11. B). Summarize the different interfaces provided an OS and explain the different services offered to a process-user. 10M

12. A). Summarize the role played by a PCB in representing a process explaining the fields and components present. 10M

OR

12. B). Following is the snapshot of a CPU 10M

Process	CPU Burst	Arrival Time
P1	10	0
P2	29	1
P3	03	2
P4	07	3

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 10) scheduling algorithms.

(P.T.O..)

13. A). Explain in detail about classical problem of synchronization. 10M

OR

13. B). Explain about deadlock prevention and avoidance methods. 10M

14. A). Under what circumstances do page faults occur? Explain in detail about page replacement algorithms for the following reference string. 10M

7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1

OR

14. B). Explain the basic method of paging with a neat diagram Compare the techniques of swapping and paging for memory management. 10M

15. A). Explain the following in file protection. 10M

i) Types of Access
ii) Access control.

OR

15. B). Analyze the any three disk scheduling algorithms with the following example (FCFS, SSTF, SCAN & C-LOOK). Head starts at 53 & Queue: 98, 183, 37, 122, 14,124, 65,67. 10M

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