CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
II–B.TECH–II–Semester End Examinations (Supply) –July- 2024
OPERATING SYSTEMS
(AI&DS)

[Time: 3 Hours] [Max. Marks: 70]

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A   (20 Marks)

1. a) List the main components of an Operating System.   [2M]
   b) Define Distributed Systems.   [2M]
   c) Differentiate between process and thread.   [2M]
   d) Define Cooperating process.   [2M]
   e) Discuss Critical section.   [2M]
   f) Define Pipe.   [2M]
   g) What is Segmentation?   [2M]
   h) What is demand paging?   [2M]
   i) List common file allocation methods.   [2M]
   j) What is the significance of lseek system call?   [2M]

PART-B   (50 Marks

2. Explain the various components of an operating system and their functions.   [10M]

OR

3. Explain about various System Calls along with syntax.   [10M]

4. Discuss the various scheduling criteria and their impact on the performance of an   [10M]
   operating system.

OR

5. Consider the following processes and schedule the process using priority scheduling   [10M]
   algorithm

Process	Arrival Time	Burst Time	Priority
P1	0	11	2
P2	5	28	0
P3	12	2	3
P4	2	10	1
P5	9	16	4

6. Define semaphore. Explain the method of application of semaphore for process   [10M]
   synchronization.

OR

7. Explain about Readers and writers problem.   [10M]

8. Explain the concept of demand paging and its role in efficient memory utilization.   [10M]

OR

9. Describe the process of swapping and its significance in memory management.   [10M]

10. Compare different file allocation methods.   [10M]

OR

11. Explain the following   [10M]
    i) lseek
    ii) stat
    iii) ioctl

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