P-818

Roll No. ....

MCA-11/MSCIT-11

Operating System

(MCA/MSCIT)

3rd Semester Examination, 2023 (June)

Time : 2 Hours]   **Max. Marks : 70**

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answer to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

SECTION–A
(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

(2×19=38)

1. What is Multiprocessor Scheduling? Explain Processor Affinity and Load Balancing?

2. Define Memory Management explain Contiguous and non-Contiguous Allocation?

3. Explain Process & the steps of Process State Diagram?

4. Define SJF Scheduling? Draw a G-chart and Calculate average waiting time of the processes.

Process	Arrival time	Brust time
P1	0	8
P2	1	4
P3	2	9
P4	3	5

5. Write a short note on Priority Scheduling? Draw a G-Chart and Calculate average waiting time of a process?

Process	Arrival time	Brust time	Priority
P1	0	4	4
P2	1	5	5
P3	2	1	7
P4	3	2	2
P5	4	3	1
P6	5	6	6

SECTION–B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only. (4×8=32)

1. What is Operating System? Explain functions of operating system? Difference between Hard Real Time and Soft Real Systems?

2. What is deadlock? Explain Deadlock detection, recovery & prevention?

3. Explain types of scheduling algorithms batch, interactive and real-time.

4. Explain the following: Multithreading, Multitasking, and Multiprogramming?

5. What are Semaphores and explain binary and counting semaphores. Write down the drawbacks of semaphore?

6. Define CPU Scheduling. Explain pre-emptive and non-pre-emptive Scheduling?

7. Explain Critical Section and its characteristics?

8. What is file, file naming & file types (directory, regular, device)? Differentiate between sequential access and random-access files?

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