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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (CSE / ECE / ME) (Sem.-7,8)

**OPERATING SYSTEMS**

Subject Code : BTCS-402-18

M.Code : 90492

Date of Examination : 20-01-2023

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- a) List various functions of an Operating System.
- b) Write at least two advantages of layered architecture of Operating System.
- c) Differentiate between Long Term and Short term Scheduler.
- d) Explain in brief about Multiprocessor Scheduling.
- e) What is critical section problem?
- f) What do you mean by Monitors? Explain.
- g) Define Deadlock? List the necessary conditions for a deadlock to occur.
- h) What do you mean by dirty bit? Explain.
- i) Why is disk scheduling important?
- j) Explain in brief about Boot-block.

## SECTION-B

2. Write a detailed note on Operating System Services.
3. Explain in brief about Threads. Write the difference between user level thread and kernel level thread.
4. What is Semaphore? Explain producer consumer problem using semaphore.
5.
  - a) What is virtual memory? Discuss the benefits of virtual memory techniques.
  - b) Write a brief note on Page Replacement.
6. **Write a detailed note on following:**
  - a) Free Space Management Techniques
  - b) Directory Implementation.

## SECTION-C

7. Explain the paging scheme of memory management in detail.
8.
  - a) What are the criteria for evaluating the CPU scheduling algorithm?
  - b) What is a Process? Explain process State diagram? Also Explain Process Control Block.
9. Write a detailed note on Deadlock Detection and Recovery.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**