

Roll No.

Total No. of Pages : 02

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B.Tech. (AI&ML / AI / DS / CE / CSE) (Sem.-4)

OPERATING SYSTEMS

Subject Code : BTCS-402-18

M.Code : 77628

Date of Examination : 22-11-2023

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. Explain the following :**

- a) Security
- b) Semaphores
- c) Non-Preemptive
- d) Booting Process
- e) Virtual Memory
- f) Hard RTS
- g) Multi-processing OS
- h) Turnaround Time
- i) Physical Address
- j) Shell.

SECTION-B

2. What is a process control block? Explain with help of a diagram.
3. Write a note on deadlocks. How they occur and how they are prevented?
4. Differentiate between internal fragmentation and external fragmentation.
5. Explain the concept of Synchronization.
6. What is arrival time of a process? Suppose a new process in a system arrives at an average of six processes per minute and each such process requires an average of 8 seconds of service time. Estimate the fraction of time the CPU is busy in a system with a single processor.

SECTION-C

7. What are various CPU scheduling criterias? Explain with the help of example.
8. List down various protection problems that an operating system might have to deal.
9. A timesharing system is to be designed to support a large number of users. List all the considerations which choices of times slice. Justify each consideration.

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.