

Roll No.

Total No. of Pages : 02

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B.Tech. (Ai & DS / AI & ML / CSE / CS / DS / Internet of Things and Cyber Security including Block Chain Technology) (Sem.-4)

OPERATING SYSTEMS

Subject Code : BTCS-402-18

M.Code : 77628

Date of Examination: 05-05-2025

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) Discuss access methods of a file.
- b) Differentiate between physical and logical address space.
- c) Discuss criteria used to measure CPU performance.
- d) What is real time operating system? Explain briefly.
- e) Briefly explain the functions performed by an Operating System.
- f) Discuss directory structure.
- g) Discuss architecture of operating system.
- h) What is a thread? Discuss types of threads.
- h) What are Boot Block and Bad Block?
- j) What do you understand by Disk Formatting? How it is done?

SECTION - B

2. What do you understand by a process? Draw the state transition diagram and explain the purpose of each state.
3. Explain with example FCFS and Round Robin scheduling algorithms.
4. Compare static and dynamic contiguous partitioned memory management schemes.
5. Explain various methods which are used for free space management during file management.
6. Explain Multi programming and Time Sharing operating systems.

SECTION - C

7. What is a deadlock? Explain the necessary conditions for deadlock occurrence. Discuss any method used for deadlock avoidance with example.
8. What do you mean by virtual memory? How it is implemented? Explain various techniques used to manage the virtual memory.
9. What do you mean by disk scheduling? Explain in detail the various disk scheduling algorithm with the help of suitable example.

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.