

Roll No.

Total No. of Pages : 02

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**B.Tech. (Civil Engineering / Electrical & Electronics Engineering /
Electrical Engineering / Electronics & Communication Engineering)
(Sem.-6)**

OPERATING SYSTEM

Subject Code : BTCS 402-18

M.Code : 79262

Date of Examination : 03-07-22

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) Differentiate between UNIX and WINDOWS Operating System.
- b) Write at least two advantages of Microkernel based structure of an Operating System.
- c) Differentiate between Pre-emptive and Non-preemptive scheduling algorithms.
- d) List at least two benefits of threads.
- e) What is critical section problem?
- f) List the necessary conditions for a deadlock to occur.
- g) Why page size is always power of 2?
- h) Explain the term compaction in brief.
- i) Define the term Disk Bandwidth.
- j) What do you mean by device drivers?

SECTION-B

2. Write a detailed note on following Operating Systems
 - a) Time sharing operating systems
 - b) Real Time operating systems
3. Write a detailed note on the concept of multithreads.
4. Explain in detail about Dining Philosopher problem.
5. What is deadlock? Explain deadlock prevention in detail.
6. Write a detailed note on Principles of I/O Software.

SECTION-C

7. Write a detailed note on Operating System Services.
8. Write a detailed note on the following
 - a) Disk formatting
 - b) Boot-block
 - c) Bad blocks
9. What is the need of Page replacement? Consider the following reference string

7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1

Find the number of Page Faults with FIFO, Optimal Page replacement and LRU with three free frames which are empty initially. Which algorithm gives the minimum number of page faults?

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.