615131-NEP

262(N)

B. Sc. (Fifth Semester)
EXAMINATION, 2024-25
COMPUTER SCIENCE
(Operating System)

Time : Two hours] **[Maximum Marks : 70**

Notes: *(i) Attempt any* **five** *questions from Section A and any* **three** *questions from Section B.*

(ii) Answer each question of Section A within 50 words.

(iii) Limit your answers within the given answer book. Additional answer book (B-Answer book) should not be provided or used.

Section-A

Note: *Attempt any* **five** *questions. Each question carries 5 marks.*

1. What is priority inversion with example?

2. Define C-Look scheduling with suitable example.

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3. Why is semaphore used? Write advantage and disadvantage of semaphore.

4. Define dual mode and multimode with suitable example.

5. What are the advantages and disadvantages of swapping?

6. Define microkernel and Modular with example and diagram.

7. Differentiate between multiprogramming and multiprocessing.

Section-B

Note: *Attempt any* **three** *questions. Each question carries 15 marks.*

1. What is hard real time system and how can we differentiate it from a soft real time system?

2. What is Peterson' solution in OS with example and also write advantage and disadvantage.

3. The set of 5 process whose arrival time and burst time are given below:

Process ID	Arrival time	Burst time
P1	0	5
P2	1	3
P3	2	1
P4	3	2
P5	4	3

If the CPU scheduling policy is Round Robin with time quantum = 2 unit, calculate.

(a) The average waiting time

(b) Average turn around time.

4. Write short nodes:

(a) Directory structure in OS.

(b) Acyclic graph directories.

(c) Solid-State disk.

5. How indexed allocation mechanism of the file allocation strategy overcomes the problems faced in linked–allocation strategy.

Write a short note on FAT

6. What are different process states? Differentiate between process and thread with the help of example.