



RAN-2111000306020086

T.Y.B.Sc. (Sem. - VI) Examination September - 2025

Computer Science (Paper - 606 - Operating System)

Time: 2 Hours]

[Total Marks: 50

સૂચના : / Instructions

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

T.Y.B.Sc. (Sem. - VI)

Name of the Subject :

Computer Science (Paper - 606 - Operating System)

Subject Code No.: 2111000306020086

Seat No.:

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Student's Signature

- (2) Answer all the questions.
(3) Figures in the right indicates full marks
(4) Illustrate your answer with necessary example, if required.

Q. 1 Answer the following questions. [Any Seven]

14

1. What is address space?
2. What is single user and multi user OS?
3. What is system call and interrupt?
4. Explain need of DMA.
5. Differentiate between Seek Time and latency.
6. Differentiate Response time and Turnaround time.
7. What do you mean by block device?
8. Explain the significance of Thread.

Q. 2 Answer the following questions. [Any Three]

12

1. Explain steps of booting process
2. Explain various file protection mechanisms used in OS
3. Explain contiguous and non contiguous allocation of memory
4. What is semaphore? Explain how it solves the critical section problem.

Q. 3 Answer the following questions. [Any Three] 12

1. What is segmentation? Explain implementation of pure segmentation.
2. Explain Banker's algorithm to avoid deadlock
3. Explain paging, demand paging with page table implementation.
4. Explain LOOK and C-LOOK disk arm scheduling algorithms with example.

Q. 4 Answer the following questions. [Any Two] 12

1. Consider the reference string given below:
5, 2, 4, 4, 3, 3, 1, 7, 5, 6, 4, 3, 1, 2, 4, 3, 4, 1
Show with diagram how many page faults occur in following replacement? Consider the memory is empty initially. And memory having 4 page frames.
 1. Optimal page replacement algorithm
 2. Least recently used page replacement algorithm.
2. Consider the following set of process, with the length CPU-burst time given in milliseconds: 6M

Process	Arrival Time	Burst Time	Priority
P1	0	3	2
P2	5	4	1
P3	5	2	3
P4	9	3	1

The processes are assumed to have arrived at time zero.

Calculate turnaround time and waiting time of each process in each of FCFS, non-pre-emptive priority and RR scheduling algorithms.

3. Explain deadlock avoidance, prevention and recovery.