

4. (a) Differentiate between : (4×3=12)
- N/w OS and distributed OS
 - Scheduler and Dispatcher
 - Scan AND C-Scan ALGORITHM
- (b) Evaluating the maximum number of pages needed
If a system supports 16 bit address line and 1K
page size. (3)
5. (a) List out different services of Operating Systems
and explain each service. (10)
- (b) What is the difference between a preemptive and
non-preemptive scheduling algorithms? Explain
FCFS scheduling algorithm. Find the average
turnaround time and average waiting time for the
processes given in the table below. (5)

Process	CPU burst time (in ms)
P1	24
P2	3
P3	3

6. (a) Describe the SSTF disk scheduling algorithm using
the following data. The dist head is initially at
position-cylinder 53. The cylinder sequence of
requests is 98, 183, 37, 122, 14, 124, 65.67. Find
the total head movement. (10)
- (b) Describe Banker's Algorithm with an example.
(5)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1324

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Unique Paper Code : 6202452303

Name of the Paper : Operating Systems

Name of the Course : **B.Voc. (Software
Development)**

Semester : III

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

- Write your Roll No. on the top immediately on receipt
of this question paper.
- Attempt total 5 questions. **Q1 (30 marks)** is
compulsory to attend. Rest, Attempt any 4 questions
(15 marks each) more.

- (a) What is a Deadlock. Describe necessary conditions
for a deadlock situation to arise. (5)
- (b) Consider the following page reference string 7, 0,
1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1.
How many page faults would occur for FIFO page
replacement algorithm, assuming three frames?
(3)

P.T.O.

- (c) Describe various file access methods. (4)
- (d) Define Operating System. List the objectives of an operating system. (3)
- (e) With a neat diagram, explain various states of a process. (5)
- (f) What is a Semaphore? Also give the operations for accessing semaphores. (4)
- (g) Fill in the Blanks : (2)
- (i) Operating system is _____ software.
- (ii) Round Robin Scheduling is a _____ version of scheduling.
- (h) Choose the correct option : (2)
- (i) THRASHING
- (A) Can be caused by poor paging algorithms
- (B) Always occur on large computers
- (C) Can always be avoided by swapping
- (D) Is a natural consequence of virtual memory system
- (ii) A critical section is a program segment
- (A) Which must be enclosed by a pair of semaphore operations, P and V

- (B) Where shared resources are accessed
- (C) Which avoids deadlocks
- (D) Which should run in a certain specified amount of time
- (i) True/False : (2)
- (A) Segmentation avoids external memory fragmentation. (T/F)
- (B) An inverted page table keeps track of one entry per virtual page per process. (T/F)
2. (a) What is Thrashing ? What is the cause of Thrashing? How does the system detect Thrashing? What can the system do to eliminate this problem? (10)
- (b) What is a Virtual Memory? Explain the concept of demand paging. (5)
3. (a) Write short notes on : (10)
- (i) Working set model
- (ii) Type of Fragmentation
- (b) What is distributed operating system? What are the advantages of distributed operating system? (5)