

(3 Hours)

[Total Marks 100]

- Note :
1. All the questions are compulsory
 2. Figures to right indicate full marks
 3. Draw suitable diagrams wherever necessary.
 4. Mixing of sub questions are not allowed

- Que 1 Attempt any following (Any Four) [20]**
- a) Explain two state and five state process Model with neat diagram.
 - b) Explain Dekker's Algorithm to provide two process solution for critical section problem.
 - c) Discuss the activities of operating system in regards to main memory and secondary memory management.
 - d) Explain Linux Features in detail.
 - e) Explain how to compile and execute c program in Linux with suitable example.
 - f) Explain role of system administrator in Linux.
- Que 2 Attempt any following (Any Four) [20]**
- a) Explain Client server and peer to peer system with neat diagram.
 - b) Discuss the activities of operating system in regards to File management and I/O Management.
 - c) Discuss Layered approach of operating system and mention how it is different from kernel based approach.
 - d) Explain Round Robin algorithm with suitable example.
 - e) Describe implementation of mutual exclusion using a semaphore.
 - f) Explain what is scheduler and its types.
- Que 3 Attempt any following (Any Four) [20]**
- a) Describe queing representation of process scheduling with suitable diagram.
 - b) Explain Readers Writers message passing problem.
 - c) Explain the requirements that satisfy the solution to critical section problem.
 - d) Define monitor, Describe its structure with neat diagram.
 - e) Describe safe and unsafe state of deadlock avoidance.
 - f) Explain first fit and best fit techniques related to memory management by giving suitable example.
- Que 4 Attempt any following (Any Four) [20]**
- a) Explain Linux File System in detail.
 - b) Explain Linux File directory tree structure with neat diagram.
 - c) Explain 6 different run levels of Linux with their run configuration.
 - d) Explain grep command with its options.
 - e) Explain chmod and chown commands in detail
 - f) Explain components of unix file system.
- Que 5 Attempt any following (Any Four) [20]**
- a) Explain difference between Hard Link and Soft Link
 - b) Discuss how to use \$# and \$* in shell script with suitable example.
 - c) Describe the functionality of linux based iptables Firewall.
 - d) Explain characteristics of good password.
 - e) Write a shell script to demonstrate at least 6 options of ls command.
 - f) Explain following command with suitable example
1) rcp 2) rwho 3) rlogin
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