

Duration 3:00 hours

Marks: 100

N.B.:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw a diagram wherever necessary.
4. Mixing of sub-questions is not allowed.

Q.1 Attempt any four

(20 marks)

- A. Write a short note on Interprocess communication.
- B. Write a short note on real time systems.
- C. State and explain various file access methods.
- D. Write a short note on directory handling. Explain any 2 directory handling commands.
- E. Write a short note on awk.
- F. Write a short note on FTP.

Q.2 Attempt any four

(20 marks)

- A. Explain Critical Section problem.
- B. State and explain any 5 operating system services.
- C. State and explain various types of system calls.
- D. Write a Short note on layered and Kernel based approaches for operating systems.
- E. Write a short note on operating system design and implementation.
- F. Write a short note on five state process model.

Q.3 Attempt any four

(20 marks)

- A. Explain Readers-Writers problem.
- B. State and explain five necessary and sufficient conditions for deadlock.
- C. State and explain various multithreading models.
- D. Consider page reference string 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2 with 3 page frames. Find number of page faults using MRU.
- E. Consider the following disk request sequence 90, 180, 40, 190, 10, 120, 60, 80 for a disk with 200 tracks calculate the Total Head Movement using SSTF (initial head is 110)
- F. Explain Single level and Tree structure directory.

4 Attempt any four

(20 marks)

- A. State and explain any five features of Linux.
- B. Write a Short note on GNU utilities.
- C. Write a short note on environment variables.
- D. Explain gpadd and usermod commands.
- E. Explain piping in Linux with example.
- F. Explain if else with example.

Q.5 Attempt any four

(20 marks)

- A. Write a short note on redirecting I/P with an example.
- B. Explain cron table.
- C. Explain while command with an example.
- D. Write a short note on Telnet.
- E. Write a short note on firewalls
- F. Write a short note on starting and stopping open SSH.