

S-773

Total Pages : 4

Roll No. -----

MCS-504
Operating System
(MCA/MSIT)

1st /3rd Semester, Examination 2022(Dec.)

Time: 2 Hours

Max. Marks: 70

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section – A

(Long Answer – type questions)

Note: Section 'A' contains Five (05) long-answer-type questions of Nineteen (19) marks each. Learners are required to answer any two (02) questions only.

[2 x 19 = 38]

P.T.O.

Q.1. (a) Consider the following I/O scenario on a single user PC:

- (i) A mouse used with a graphical user interface.
- (ii) A disk drive containing user files.
- (iii) A tape drive on multitasking operating system.

For each of these I/O scenario can you design the operating system using buffering and spooling.

- (b) Discuss the elevator algorithm for disk scheduling with suitable example.

Q.2. (a) What do you mean by an operating system? Explain all its types with example.

- (b) Illustrate the four necessary task of an operating system?

Q.3. (a) What do you mean by process? Discuss the process? Discuss the process states with suitable diagram.

- (b) Discuss the multitasking and multiprogramming.

- Q.4. (a) What do you mean by semaphore? Explain all the types of semaphore.
- (b) Explain IPC and its types.
- Q.5. (a) What are the components of Linux Operating? Discuss in detail.
- (b) Explain the characteristics and classification of real time operating system.

Section – B

(Short-answer-type questions)

Note: Section 'B' contains Eight (08) short-answer-type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only.

[4 x 8 = 32]

- Q.1. Explain deadlock and four necessary conditions to be a deadlock.

P.T.O.

- Q.2. Illustrate the working of paging with suitable example.
- Q.3. Explain the difference between preemptive and non-preemptive scheduling. State why strict non-preemptive unlikely to be used in a computer center.
- Q.4. Explain the optimal and FIFO page replacement algorithm.
- Q.5. How many types of CPU scheduler? Discuss briefly.
- Q.6. Explain the structure of Unix File System.
- Q.7. Explain the following terms:
Thrashing, Dispatcher and Virtual Machine.
- Q.8. Explain the working of DMA with suitable diagram.
