

CBCS SCHEME



USN

Fifth Semester B.E. Degree Examination, Jan./Feb. 2023 Operating System

17EC553

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Define operating system. What are the goals of an operating system? Explain. (07 Marks)
- b. Illustrates operations of a multiprogramming OS. (08 Marks)
- c. List the features of real time operating systems. (05 Marks)

OR

- 2 a. Explain different computational structures of operating system with examples. (10 Marks)
- b. Discuss various computations in an operating system. (04 Marks)
- c. What are distributed system? List the features of it. (06 Marks)

Module-2

- 3 a. Discuss the components of process environment. (06 Marks)
- b. Define process state. With neat diagram illustrate fundamental state transitions for a process. (08 Marks)
- c. Briefly discuss the different methods of implanting threads. (06 Marks)

OR

- 4 a. Discuss the different fields of Process Control Block (PCB). (10 Marks)
- b. Illustrate long, medium and short term scheduling with neat diagram. (10 Marks)

Module-3

- 5 a. Compare contiguous and non contiguous memory allocation. (06 Marks)
- b. Explain concept of segmentation with neat diagram. (08 Marks)
- c. List the functions performed by virtual memory handler. (06 Marks)

OR

- 6 a. Consider the following page reference for a Process : 5, 4, 3, 2, 1, 4, 3, 5, 4, 3, 2, 1, 5 - - - -
Calculate the page faults using FIFO and LRU page replacement with frame size = 3. (08 Marks)
- b. Illustrate demand loading of page with neat diagram. (08 Marks)
- c. Discuss the arrangement used to execute processes in paging. (04 Marks)

Module-4

- 7 a. List the facilities provided by the file system and IOCs. (06 Marks)
- b. Describe logical organization in file system with neat diagram. (08 Marks)
- c. Explain linked and indexed disk space allocation techniques. (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 8 a. Discuss file system actions at open and close. (10 Marks)
b. Explain the fields of file control block. (05 Marks)
c. Explain two techniques of Access methods in IOCs. (05 Marks)

Module-5

- 9 a. Define message passing and explain how it could be implemented. (10 Marks)
b. Illustrate message passing using mail box approach. Also list the advantages of it. (10 Marks)

OR

- 10 a. Explain deadlock handling approaches. (06 Marks)
b. Illustrate different approaches to deadlock preventions with neat diagram. (10 Marks)
c. List the different events related to resource allocation in deadlock. (04 Marks)
