

CBCS SCHEME

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17EC553

Fifth Semester B.E. Degree Examination, Jan./Feb. 2021 Operating System

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. Discuss various resource allocation techniques. (10 Marks)
b. Explain different computational structures of Operating System with examples. (10 Marks)

OR

- 2 a. Explain different classes of Operating Systems. (10 Marks)
b. Discuss using timing chart :
i) When CPU bound program has higher priority.
ii) When I/O bound program has higher priority. (10 Marks)

Module-2

- 3 a. Define a Process and discuss OS view of a process. (08 Marks)
b. Discuss various states transition for a process. (06 Marks)
c. Explain the various field of a PCB. (06 Marks)

OR

- 4 a. Explain Long term, Medium and Short term scheduling. (10 Marks)
b. Discuss two representative approaches to implementation of threads. (10 Marks)

Module-3

- 5 a. Compare and contrast Contiguous and non Contiguous memory allocation techniques. (08 Marks)
b. Write short notes on : i) Paging ii) Segmentation. (12 Marks)

OR

- 6 a. Explain Demand paging preliminaries. (10 Marks)
b. With an example, discuss FIFO, LRU page replacement policy. (10 Marks)

Module-4

- 7 a. Explain the interface between File system and IOCS. (10 Marks)
b. Compare and contrast Sequential file organization and Direct file organization. (10 Marks)

OR

- 8 a. Explain Directory structures. (10 Marks)
b. Discuss briefly File system actions at OPEN and CLOSE. (10 Marks)

Module-5

- 9 a. Define Message passing and Explain how it could be implemented. (10 Marks)
b. Discuss the following with respect to main box : i) Features ii) Advantages
iii) Air line reservations Server using 3 mail boxes. (10 Marks)

OR

- 10 a. Define Deadlock, Discuss Resource request and allocation graph and Wait – for – graph for a system containing resource class and processes. (10 Marks)
b. Explain Deadlock Detection Algorithm. (10 Marks)

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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.