CBCS SCHEME

USN | | | | | | | | | | |

18EC641

Sixth Semester B.E. Degree Examination, June/July 2025
Operating Systems

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. List the different classes of operating system. In detail discuss prime concerns and key concept of each class. **(10 Marks)**

b. Define the following :
i) Through put
ii) Turnaround time
iii) Response time
iv) System call
v) Program pre-emption. **(10 Marks)**

OR

2 a. Define operating system. Discuss the operation of an operating system. **(10 Marks)**

b. Compare Batch processing and multiprogramming operating system. **(10 Marks)**

Module-2

3 a. Discuss OS view of process in detail. **(08 Marks)**

b. What is PCB? In detail discuss PCB data structure. **(08 Marks)**

c. Define threads list its advantages. **(04 Marks)**

OR

4 a. Compare preemptive and non preemptive scheduling. **(10 Marks)**

b. Discuss scheduling in Unix and scheduling in Linux. **(10 Marks)**

Module-3

5 a. Compare contiguous and non contiguous memory allocation. **(10 Marks)**

b. Explain paging and segmentation process in memory allocation. **(10 Marks)**

OR

6 a. Define Virtual Memory. Discuss two fundamental approaches used to implement virtual memory. **(07 Marks)**

b. List all functions performed by virtual memory handler. **(07 Marks)**

c. In detail, discuss Linux virtual memory. **(06 Marks)**

Module-4

7 a. List and discuss file operations performed by processes. **(10 Marks)**

b. Explain interface between file system and IOCS. **(10 Marks)**

OR

8 a. Discuss the facilities provided by the file system and the IOCS. **(06 Marks)**

b. Describe three fundamental file organization methods. **(09 Marks)**

c. Explain linked allocation and disk space. **(05 Marks)**

Module-5

9 a. Discuss the issues in message passing. **(05 Marks)**

b. How to implement message passing? Explain in detail. **(10 Marks)**

c. What is mailbox? Explain the uses of mailbox. **(05 Marks)**

OR

10 a. Define Deadlock. List and explain events related to resource allocation. **(08 Marks)**

b. Discuss dead lock handling approaches. **(06 Marks)**

c. Write a note on deadlock prevention. **(06 Marks)**

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