

BACHELOR OF TECHNOLOGY (CBCS - 2023)
B. Tech. Sem-III INFORMATION TECHNOLOGY : WINTER: 2025
SUBJECT: OPERATING SYSTEM

Day : Wednesday
Date : 17/12/2025

W-29245-2025

Time : 10:00 AM-01:00 PM
Max. Marks : 60

NB :

1. All questions are COMPULSORY.
2. Figures to the right indicate FULL marks for the question.
3. Draw neat labelled diagrams WHEREVER necessary.
4. Assume suitable data, if necessary.

Q. 1 Enlist and describe various components of operating system. (10)

OR

Q. 1 Describe with an example function of operating system according to user's viewpoint and system's viewpoint. (10)

Q. 2 Describe process state transition diagram along with process control block. (10)

OR

Q. 2 What is Context Switch? Explain inter-process communication in accordance with shared memory and message passing system. (10)

Q. 3 Describe with suitable example deadlock avoidance and prevention along with suitable example. (10)

OR

Q. 3 Describe Round Robin Scheduling algorithm. Also calculate average waiting time using Gantt chart for the following processes. (10)

Process	CPU burst time in ms
P1	8
P2	10
P3	6
P4	4

Q. 4 Describe optimal page replacement algorithm with reference to suitable example. (10)

OR

Q. 4 Describe memory allocation strategies: First Fit, Best Fit and Worst Fit with suitable example. (10)

Q. 5 Explain contiguous allocation method with suitable example. (10)

OR

Q. 5 Describe disk scheduling and management with reference to suitable example. (10)

Q. 6 Explain virtual machines along with Para - virtualization.

(10)

OR

Q. 6 Describe hypervisor call interface with an example.

(10)

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