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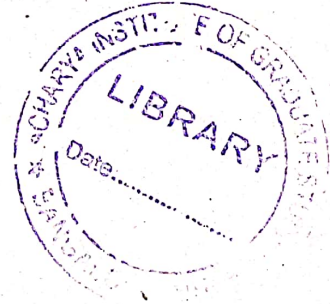
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III Semester B.C.A Degree Examination, December/January - 2025/26**COMPUTER APPLICATIONS****Operating Systems****(NEP Scheme (R))****Time : 2½ Hours****Maximum Marks : 60****Instructions to Candidates:**

Answer all Parts. Answer any four questions from each Part.

PART - A**I. Answer any Four questions. Each question carries 2 marks.****(4×2=8)**

1. List various components of operating system.
2. What are system calls?
3. What do you mean by critical section problem?
4. Write the various file attributes.
5. What is fragmentation? Mention its types.
6. Write the features of Linux system.

**PART - B****II. Answer any Four questions. Each question carries 5 marks.****(4×5=20)**

7. Explain different types of operating system.
8. What is process? Explain process state transition with diagram.
9. Define Deadlock. Explain the necessary conditions for Deadlock.
10. Write the advantages and disadvantages of linked allocation.
11. Define page fault. Explain procedure for handling page fault with diagram.
12. Explain the design principles of windows operating system.

[P.T.O.]

**PART - C**

III. Answer any Four questions. Each question carries 8 marks. (4×8=32)

13. Explain different operating system services. (8)
14. What are schedulers? Explain different types of schedulers with neat diagram. (8)
15. Consider the following set of processes with given CPU burst time and arrival time.

PID	Arrival time	Burst time
P1	0	8
P2	1	6
P3	2	5
P4	3	4

Calculate the average waiting time and turn around time using SJF scheduling and RR algorithm with time quantum 2 ms. (8)

16. Explain any two disk scheduling algorithms. (8)
17. Describe the producer - consumer problem for synchronization. (8)
18. a) Explain different directory structure. (4)
- b) What is distributed file system? Write the advantages and disadvantages. (4)
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