BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)

B. Tech. Sem - IV COMPUTER SCIENCE & BUSINESS SYSTEMS : SUMMER : 2024

SUBJECT: OPERATING SYSTEMS

Day : Wednesday
Date : 22/05/2024

S-24154-2024

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

N.B.

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Assume Suitable data if **NECESSARY**.
4) Use of **CALCULATOR** is allowed.

Q.1 Define system call. Write in detail about various system calls. **(10)**

OR

Q.1 Explain resource view, process view and hierarchical view of an operating system. **(10)**

Q.2 What is process? Explain different states of a process in detail. **(10)**

OR

Q.2 Explain concept of context switching with the help of neat diagram. **(10)**

Q.3 Specify the role of long term, short term and medium term scheduler in OS with diagram. **(10)**

OR

Q.3 For the table given below calculate the average waiting time and average turn around time and draw Gantt chart illustrating the process execution using Round Robin and SJF(Shortest job first-Non-Preemptive) algorithms. **(10)**

Process	Arrival Time	Burst Time
P1	0	10
P2	1	06
P3	2	12
P4	3	15

Q.4 What is critical section? Explain in detail Readers-Writers problem in operating system. **(10)**

OR

Q.4 What is deadlock? Explain Banker's Algorithm with example. **(10)**

Q.5 For the reference string given 6,5,1,2,5,3,5,4,2,3,6,3,2,1,2 Count the number of page faults that occur with 3 farms using FIFO, optimal & LRU page replacement methods. **(10)**

OR

Q.5 Explain following terms **(10)**

i) Internal fragmentation
ii) External fragmentation
iii) Compaction

Q.6 Write in detail about various file access methods with suitable diagram. **(10)**

OR

Q.6 Describe disk scheduling with its any two algorithms with suitable examples. **(10)**

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