BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)

B. Tech. Sem - IV Computer Science and Business Systems : WINTER : 2023

SUBJECT : OPERATING SYSTEMS

Day : Monday

Date : 20-11-2023

W-24154-2023

Time : 02:30 PM-05:30 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 Explain basic functions of operating system. Write in detail about generations of OS. **(10)**

OR

Q.1 Explain OS services in detail. Define system call in OS. **(10)**

Q.2 Explain process control block in detail. **(10)**

OR

Q.2 Draw and explain process state transition diagram with suitable example. **(10)**

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

OR

Q.3 Consider following processes where Arrival and Burst time are shown below, calculate Average waiting time and Average Turn- around time, if the processes are scheduled using FCFS **(10)**

Process	Burst Time	Arrival Time
P1	5	0
P2	4	2
P3	7	3
P4	6	5

Q.4 What is critical section? Explain Race condition with an example. **(10)**

OR

Q.4 What is deadlock? Explain necessary conditions for deadlock with example. **(10)**

Q.5 Consider the page reference string 1,2,3,4,2,3,4,5,6,7,3,2.Calcualte page fault and hit ratio for FIFO, LRU & Optimal (Frame size =3) **(10)**

OR

Q.5 Explain virtual memory concept and explain paging, page fault and demand paging in detail. **(10)**

Q.6 Explain disk management. **(10)**

OR

Q.6 Explain file system structure. **(10)**

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