BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)

Computer Science & Business Systems

B. Tech. Sem - IV :SUMMER : 2023

SUBJECT : OPERATING SYSTEMS

Day : Tuesday | Time : 10:00 AM-01:00 PM

Date : 23-05-2023 | S-24154-2023 | Max. Marks : 60

N.B.

1) All Questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data if necessary.

Q. 1 Explain Basic functions of Operating system and different evolutions of operating system. **(10)**

OR

Q. 1 Explain following terms: - **(10)**

i) OS services
ii) Interrupt Handling
iii) Hierarchical View of an OS

Q. 2 Define thread. Explain its states. Write benefits of threads. Write types of threads. **(10)**

OR

Q. 2 Define process. Explain process control Block in detail. **(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 following algorithms: - RR (Time Quantum-2) SJF (non-preemptive) **(10)**

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

Q. 4 Explain necessary conditions for deadlock with example. Explain Banker's Algorithm with suitable example. **(10)**

OR

Q. 4 Explain in detail: - **(10)**

i) Dining Philosopher problem.
ii) Producer consumer problem.

Q. 5 For the following ref string **(10)**

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 frames using FIFO, optimal and LRU page replacement methods.

OR

Q. 5 Explain First fit, Best fit and Worst fit memory allocation strategies with suitable example. **(10)**

Q. 6 Explain the following terms: - **(10)**

i) Directory Structure
ii) File system structure

OR

Q. 6 Explain Free Space Management in detail. **(10)**