

Total No. of Questions: 8]

SEAT No. :

P270

[6003]-348

[Total No. of Pages : 2

T.E. (Computer Engineering)
SYSTEM PROGRAMMING & OPERATING SYSTEM
(2019 Pattern) (Semester-I) (310243)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Attempt Q.1 or Q.2, Q.3 Q.4, or Q.5 or Q.6, Q.7 or Q.8.
- 2) Figures to the right indicate full marks.
- 3) Neat diagram must be drawn wherever necessary.
- 4) Assume suitable data if necessary.

Q1) a) Explain "General loading scheme (using suitable diagram)" with advantages and disadvantages? [9]

b) Give complete design of Direct Linking Loader? [9]

OR

Q2) a) Give complete design of Absolute Loader with suitable example? [9]

b) What is the need of DLL? Differentiate between Dynamic and static linking? [9]

Q3) a) Explain the following types of Schedulers. [9]

i) Short Term

ii) Long Term

iii) Medium Term

b) Explain seven state process model with diagram? Also explain difference between Five state process model & Seven state process model? [8]

OR

P.T.O.

- Q4) a)** Draw Gantt chart and calculate Avg. turnaround time, Avg. waiting time for the following process using SJF non preemptive and round robin with time quantum 0.5 Unit [9]

Process	Burst Time	Arrival Time
P1	2	10
P2	1	10
P3		11
P4	1	12

- b) What is mean by Threads, Explain Thread lifecycle with diagram in detail? [8]

- Q5) a)** Write a short note on following with example? [9]

i) Semaphore ii) Monitor iii) Mutex

- b) Explain Deadlock prevention, deadlock avoidance, deadlock detection, deadlock recovery with example? [9]

OR

- Q6) a)** Explain producer Consumer problem & Dining Philosopher problem with solution? [9]

- b) What is deadlock? State and explain the conditions for deadlock, Explain them with example? [9]

- Q7) a)** Consider page sequence 2, 3, 2, 1, 5, 2, 4, 5, 3, 2, 5, 2 and discuss working of following page replacement policies Also count page faults. (use no. of Frames = 3) [8]

i) FIFO

ii) LRU

- b) Discuss fixed Partitioning and Dynamic Partitioning in detail. [9]

OR

- Q8) a)** Write a short note on following with diagram [8]

i) VM with Paging

ii) VM with Segmentation

- b) Explain Page Table structure and Inverted page Table? [9]

