

Total No. of Questions : 8]

SEAT No. :

PD-4243

[Total No. of Pages : 2

[6403]-37

T.E. (Computer Engineering)

SYSTEMS PROGRAMMING AND OPERATING SYSTEM

(2019 Pattern) (Semester - V) (310243)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Figures to the right indicate full marks.
- 3) Neat diagrams 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) What is the need of DLL? Differentiate between Dynamic and static linking? [9]

OR

Q2) a) List and explain different loader schemes in detail. [9]

b) What are the different types of Loaders? Explain compile and Go loader in detail. [9]

Q3) a) List different types of Operating Systems? Describe any two of them. [9]

b) Differentiate Preemptive and non-preemptive scheduling. Explain one example of each. [8]

OR

Q4) a) What is time quantum and its significance in Round robin scheduling. [9]

b) Explain multithreaded mode and Process Control block in detail. [8]

P.T.O.

- Q5) a)** Write a short note on following with example? [9]
i) Semaphore
ii) Monitor
iii) Mutex
b) What is Deadlock? Explain deadlock avoidance algorithm with suitable example. [9]

OR

- Q6) a)** Explain hardware approach for Mutual Exclusion with its advantages and disadvantages. [9]
b) What is semaphore? Write a solution to Reader Writer problem using Semaphore with Readers have priority. [9]

- Q7) a)** Given a memory partitions of 100 K, 500 K, 200 K, 300 K and 600 K (in order), how would each of the first fit, best fit and worst fit algo. Place processes of size 212 K, 417 K, 112 K, 426 K (in order)? Which also makes the most efficient use of memory. [9]
b) Compare Paging and Segmentation with the help of an example. [8]

OR

- Q8) a)** Consider page sequences 2, 3, 2, 1, 5, 4, 5, 3, 2, 2, 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) What is TLB? Explain the paging system with the use of TLB? What are the advantages of TLB? [9]

