Total No. of Questions : 8]

SEAT No. : [ ]

PD-4243

[Total No. of Pages : 2

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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 K200 K,300Kand 600K (in order), how would each of the first fit, best fit and worst fit algo. Place processes of size 212K, 417K, 112K, 426K (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]**

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