Total No. of Questions : 8]

SEAT No. : ____

P-7539

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T.E.(Computer Engineering)

SYSTEM PROGRAMMING AND OPERATING SYSTEM

(2019 Pattern) (Semester - I) (310243)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates :

1) ***Attempt Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4 , Q. No. 5 or Q. No. 6 and Q.No 7 or Q.No 8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) a) Explain in brief Compile and Go loading scheme. What are advantages and disadvantages of it. **[10]**

b) Describe the concept of DLL? How dynamic linking can be done with or without import. **[8]**

OR

Q2) a) Write short notes on : **[10]**

i) Subroutine Linkage

ii) Overlays

b) With the help of diagram explain General Loading Scheme. **[8]**

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

b) Differentiate Preemptive and non preemptive scheduling. **[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]**

Q5) a) What is semaphore? Justify how semaphore is used to solve critical section problem. **[10]**

b) Explain necessary conditions for occurrence of deadlock. **[8]**

OR

Q6) a) Explain hardware approach for Mutual Exclusion with its advantages and disadvantages. **[10]**

b) Write a solution to Reader Writer problem using Semaphore with Readers have priority. **[8]**

Q7) a) Given a memory partitions of l00K, 500K, 200K, 300K and 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) What is internal fragmentation? Explain same with suitable diagram/ example. **[8]**

OR

Q8) a) Write and explain Deadlock Avoidance Bankers Algorithm. **[9]**

b) Compare Paging and Segmentation with the help of example. **[8]**