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SEAT No. :

PE-2519

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[6583]-45

T.E. (Computer Engg./Computer Science)

SYSTEM PROGRAMMING & OPERATING SYSTEM

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

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates :

1) ***Answers Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side 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) 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) 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) 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) Given a memory partitions of 100K, 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]**