

Total No. of Questions : 8]

SEAT No. :

P-7618

[Total No. of Pages : 2

[6180]-138

T.E. (Information Technology)

OPERATING SYSTEMS

(2019 Pattern) (Semester-I) (314442)

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) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume Suitable data if necessary.

- Q1)** a) Describe in brief the different IPC mechanisms. [9]
- b) What is deadlock? Explain the necessary and sufficient conditions for the occurrence of a deadlock. [9]

OR

- Q2)** a) Explain the following with example [9]
- i) Mutual Exclusion
 - ii) Synchronization
 - iii) Race condition.
- b) What is Critical Section Problem? Explain readers-writers problem. [9]

- Q3)** a) What is page Fault? For the given reference string with 3-page frame available, determine the number of page faults for FIFO and LRU algorithms: [9]
- 3, 5, 3, 7, 2, 1, 5, 4, 6, 7, 4, 1, 2.

- b) Explain Demand paging with the help of neat diagram. [8]

OR

- Q4)** a) Explain Buddy System with the help of neat diagram and example. [9]
- b) What is segmentation? How address Translation is performed in segmentation system? [8]

P.T.O.

- Q5) a) Describe three methods of record blocking with the help of neat diagrams. [9]
- b) Explain the different functions of a file management system. [9]

OR

- Q6) a) Assume a disk with 200 tracks and the disk request queue has random Requests in it as follows: 98,183,37,122,14,124,65,67. [12]
- Find the no. of tracks traversed and average seek length if [6]
- i) FCFS
- ii) SSTF
- iii) SCAN is used and initially head is at track no 53.
- b) What is spooling? Explain with suitable diagrams. [6]

- Q7) a) Explain the data structures required for two PASS Assembler in detail. [6]
- b) What is Macro? Explain macro call and macro expansion with suitable example. [6]
- c) Discuss with example what is forward reference problem. [5]

OR

- Q8) a) What is Loader? What are the basic functions of loaders? [10]
- b) What is system software? Explain any four system software in brief? [7]

