

Total No. of Questions : 8]

SEAT No. :

P9122

[6179]-248

[Total No. of Pages : 2

S.E. (Artificial Intelligence and Data Science)

OPERATING SYSTEMS

(2019 Pattern) (Semester - III) (217521)

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) What is Readers/Writers problem? Explain with suitable example. [8]
b) What is deadlock detection and recovery? Explain two options of deadlock recovery. [6]
c) What do you mean by pipe? Explain anonymous and named/FIFO pipe. [4]

OR

- Q2)** a) What is Producer-Consumer Problem? How to solve it using Semaphores and Mutex. [8]
b) Write a short note on (Any Two) [10]
i) Mutual Exclusion
ii) Inter-process Communication
iii) Semaphores

- Q3)** a) List the page replacement algorithms and explain LRU in detail. [7]
b) Explain Buddy system memory allocation with suitable example. [6]
c) Write a short note on Segmentation. [4]

OR

- Q4)** a) Explain the concept of Virtual Memory. [7]
b) Differentiate between paging and segmentation. [6]
c) Explain Fixed Partitioning with suitable example. [4]

P.T.O.

- Q5)** a) What is file system? Explain File system implementation in detail. [8]
b) Define following term with respect to disk access [6]
i) Seek time
ii) Rotational Latency
iii) Data transfer time
c) Differentiate SCAN and C-SCAN disk scheduling policy. [4]

OR

- Q6)** a) Explain Directory structure with its types. [8]
b) Write a short note with respect to disk scheduling policies (Any Two) [10]
i) FIFO
ii) LIFO
iii) STTF

- Q7)** a) Explain in detail the memory management in LINUX system. [7]
b) Explain system calls in Linux. [6]
c) Differentiate between Linux and Unix [4]

OR

- Q8)** a) Explain Linux file system. [7]
b) Explain Linux Shell? [6]
c) Explain Linux booting process. [4]

