F.Y. B Sc. IT - SEM I - Reg - Oct' 2019

A.T.K.T.

O.S.

7.10.19

Sub- Operating System **Class-Fy(BSc).IT**

(2½ Hours) **[Total Marks: 75]**

N. B.: (1) All questions are compulsory.

(2) Make suitable assumptions wherever necessary and state the assumptions made.

(3) Answers to the same question must be written together.

(4) Numbers to the right indicate marks.

(5) Draw neat labeled diagrams wherever necessary.

(6) Use of Non-programmable calculators is allowed.

1. Attempt any three of the following: 15

a. List various operating systems. Explain any two.

b. Define Operating System. How operating system can be used as a resource manager.

c. Explain the IPC Problem.

d. Write a short note on processs state.

e. Explain the Round Robin scheduling algorithm with suitable example.

f. Explain the shortest job first scheduling algorithm with suitable example.

2. Attempt any three of the following: 15

a .Explain in brief concept of segmentation.

b. List and explain any five operations performed on Directories.

c. List various page replacement algorithms. Explain any one with example.

d. List and explain different types of files.

e. List and explain various operations on files.

f. Write the meaning of following file attributes.

1. Owner 2. Creation time 3. Current size 4. Key position 5. Protection

3. Attempt any three of the following: 15

a. Explain the concept of direct memory access.

b. Write a short note on Ostrich Algorithm.

c. Explain various levels of RAID.

d. Define deadlock. Write the conditions for resource deadlock.

e. How deadlock is prevented?

f. Explain the working of banker's algorithm .

4. Attempt any three of the following: 15

a Write a short note on memory virtualization

b Explain any five advantages of virtualization.

c Write the essential characteristics of cloud.

d Write a note on Type-1 and Type-2 Hypervisor.

e List various multiprocessor operating types. Explain any one.

f What is Master-Slave Multiprocessors Operating System?

5. Attempt any three of the following: 15

a. Explain the booting process of Linux

b. List and explain any five file-system related system calls in Linux.

c. Explain the concept of shell in Linux.

d. Explain the fundamental concept of memory in Windows.

e. Explain the booting process of windows OS.

f. Explain process lifecycle in Android.
