2019

B.SC (H)

3rd Semester Examination

COMPUTER SCIENCE (Honours)

Paper - C 6-T

[Operating System]

Full Marks : 40   Time : 2 Hours

The question are of equal value for any group/half. The figures in the margin indicate full marks. Candidates are required to give their answers in their own words as far as practiable. Illustrate the answers wherever necessary.

Group - A

1. Answer any *five* questions : $5 \times 2 = 10$

   a) Differentiate between workstation and personal computer.   2

   b) Why the use of thread is beneficial?   2

   c) What is meant by system call?   2

   d) What are the types of users considered during file permission in Unix?   2

[Turn Over]

e) State fixed partition of memory.   2

f) What does throughput of a process signifies?   2

g) Write differences between paging and swapping ?   2

h) What do you mean by process synchronization ?   2

Group - B

2. Answer any *four* questions : $4 \times 5 = 20$

   a) Describe five state process models.   5

   b) Is there any difference between kernel level and user level threads? Justify your answer..   5

   c) Write a note on segmentation of memory management.

   d) "A safe state is not a deadlock state. Conversely a deadlock state is an unsafe state. Not all unsafe states are deadlock"- justify your answer.   5

   e) Explain the difference between preemptive and non-preemptive scheduling.Can starvation occur in a non-preemptive scheduling system?   5

   f) Describe the Belady's Anomoly in connection with the page replacement algorithm with example.   5

Group - C

3. Answer any *one* questions : $1 \times 10 = 10$

a) Compose FCFS, SJF and Round-Robin scheduling algorithms by computing average waiting time. There are 5 processes with CPU burst time as 10, 5, 17, 25, 6 and arrival times are 0, 1, 0, 2, 7 units. Assume time quantum for Round-Robin scheduling as 5 units.

10

b) What are the different algorithmic solutions of critical section problem? Explain. Also, list the differences between physical and logical address.   (7+3)