

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -I EXAMINATION- Oct 2017

B.Tech/ 5th Semester

COURSE CODE: 10B11CI511

MAX. MARKS:15

COURSE NAME: OPERATING SYSTEM

COURSE CREDITS: 04

MAX. TIME: One Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Section-A: Attempt all questions. All questions carry Two Marks [2 X 4= 8 Marks]

1. Distinguish between the client-server and peer-to-peer models of distributed systems.
2. List the two models of interprocess communication? What are the strengths and weaknesses of the two approaches?
3. What are two differences between user-level threads and kernel-level threads? Under what circumstances is one type better than the other?
4. What resources are used when a thread is created? How do they differ from those used when a process is created?

Section-B: Attempt all questions.

5. Explain the difference in how much the following scheduling algorithm discriminate in favor of short processes: **[3 Marks]**
 - (a)FCFS: First Come First Serve
 - (b)RR: Round Robin
 - (c)Multilevel Feedback Queues

CI-5, BT

6. Consider the following set of processes, with the length of the CPU-burst time given in milliseconds: [4 Marks]

Process	Burst Time	Priority
P1	3	2
P2	2	1
P3	10	4
P4	3	2
P5	5	2

The processes are assumed to have arrived in the order $P1, P2, P3, P4, P5$, all at time 0.

- a. Draw four Gantt charts illustrating the execution of these processes using FCFS, SJF, a non-preemptive priority (a smaller priority number implies a higher priority), and RR (quantum = 1) scheduling.
- b. What is the turnaround time of each process for each of the scheduling algorithms in part a?
- c. What is the waiting time of each process for each of the scheduling algorithms in part a?
- d. Which of the schedules in part a results in the minimal average waiting time (over all processes)?