

**NB :** Question no 1.is compulsory .

Attempt any three out of remaining.

Assumptions are made wherever necessary.

All questions carry 10 marks.

- Q1. a. List out characteristics of OS and explain any two. 10  
 b. What are the differences between process and threads.  
 c. Define the term multiprogramming and multithreading.  
 d. List out features of RTO's.  
 e. What are all the goals of CPU scheduling.

- Q2. a. Explain the preemptive and non preemptive scheduling algorithms with example. 5  
 b. Calculate Turnaround time (TAT) and Waiting time for the below given case by applying preemptive priority scheduling algorithm. The arrival time for all the process is =0, draw the Gantt chart also. 5

Process	Burst Time	Priority
P1	12	4
P2	10	5
P3	5	2
P4	4	1
P5	3	3

- Q3. Explain three dynamic memory allocation algorithms with example. 10  
 Q4. Explain the concept of I/O management. 10  
 Q5. Explain the RTO's with it's architecture. 10  
 Q6. a. Explain the concept of paging. 5  
 b. Explain these commands with syntax - man, ls, cp, mkdir, rmdir. 5