

- 3** Write short notes : (Any **Three**) **18**
- (1) Hierarchical page table
 - (2) Banker's Algorithm to avoid deadlock
 - (3) Contiguous memory allocation
 - (4) TLB

- 4** Do as directed : **14**
- (a) Consider the following set of process, with the **7**
length CPU-burst time given is milliseconds :

Process	Burst time	Priority
P1	6	3
P2	7	1
P3	3	3
P4	7	4
P5	9	2

The process are assumed to have arrived in following order :

P1, P2, P3, P4, P5 all at time zero

- (i) Draw Gantt chart to illustrate execution of process using following algorithm :
 - FCFS scheduling
 - SJF scheduling
 - Priority based scheduling
- (ii) Calculate turnaround time and waiting time of each process in each scheduling algorithm.

- (b) What is semaphore? What are the operations of it? **7**
Discuss producer and consumer problem using Semaphores.

OR

Explain segmentation with paging in detail.

- 5** Answer the following : (Any **Two**) **10**
- (1) Describe inverted page table.
 - (2) Explain process state table with PCB in detail.
 - (3) Define page fault. Write steps to handling page fault.