

( 2 )

4. (a) Differentiate between Preemptive scheduling and Non-preemptive scheduling. 5
- (b) What is the difference between 'program' and 'process'? 5
5. Consider the following set of processes with the length of CPU burst in milliseconds :

Process	Burst time	Priority
$P_1$	10	3
$P_2$	1	1
$P_3$	2	3
$P_4$	1	4
$P_5$	5	2

Arrival order— $P_1, P_2, P_3, P_4, P_5$  at time 0.  
What is the turnaround time for each process? 10

6. Explain the following : 10
- (a) Fragmentation
  - (b) Paging
  - (c) Virtual memory
  - (d) Page replacement

7. Consider the following reference strings :  
1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 9, 7, 8, 9, 5, 4, 5, 4, 2  
Calculate page fault rates for FIFO and LRU assuming memory size in 4 frames. 10

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( 3 )

8. (a) Explain polling and spooling. 5
- (b) Explain DMA operation. 5
9. Explain process management and scheduling in LINUX system. 10

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*22nd August to  
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Roshford  
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