

<b>Seat No.</b>	
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10) A process is selected from the \_\_\_\_\_ queue by the \_\_\_\_\_ scheduler, to be executed.

- a) Blocked, short term      b) Wait, long term  
c) Ready, short term      d) Ready, long term

**Q.1 B) State whether True or False:-**

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- 1) In a fixed partition system, main memory is divided into several partitions of the same size.
- 2) One of the disadvantages of the priority scheduling algorithm is that: it can lead to some low priority process waiting indefinitely for the CPU.
- 3) A process in the running state is currently being executed by the CPU.
- 4) Virtual memory space is always smaller than physical memory space.

**Q.2 Solve any seven from the following.**

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- a) What are components of operating system?
- b) Define Resource Allocation Graph?
- c) What is multilevel Queue scheduling?
- d) What is Swapping?
- e) What is Compaction?
- f) List out File Types.
- g) Define real time OS.
- h) Define layered structure.
- i) Define thread and list its types.

**Q.3 A) Solve any two of the following.**

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- 1) Explain short term and Long term scheduler.
- 2) Explain File Protection.
- 3) Explain virtual machine.

**B) Explain Critical Region.**

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**Q.4 Answer any two from the followings:-**

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- Explain Banker Algorithms with example.
- Consider the following page reference string: Remember 3 frames are initially empty  
1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6.  
How many page faults would occur for the LRU & LFU replacement?
- Explain dining philosopher problem.

**Q.5 Answer any two from the followings:-**

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- Explain segmentation in details.
- Example semaphore in details.
- Consider the all the following 5 processes arrive at time 0, in the order given the burst time are as follows. Solve FCFS, SJF and RR (quantum = 10 ms) scheduling algorithms for the set of processes. Draw Gantt chart. Which algorithm would give the minimum average waiting time?

Process	Burst Time (ms)
P1	10
P2	29
P3	3
P4	7
P5	12