Question Bank

3.1   What is the difference between a program and a process?

3.2   What is CPU utilization?

3.3   What is the motivation for

   a. Multi-programming and

   b. Time sharing.

3.4   What is "response time"?

3.5   With the help of a state transition diagram, explain various states of a process.

3.6   What is a zombie process and how it may manifest itself?

3.7   Explain the architecture of the simple operating system employing queue data structures?

3.8   Describe a queue based state transition model. Assume that OUR_OS, a new OS is designed to support processes with two levels of priority "high" and "low".

   a. How would you redraw the queue based state transition model?

   b. If we have additionally, three devices that provide the services in FCFS

   c. Mode then how will we modify the state transition diagram.

3.9   Explain the difference between busy waiting and blocking.

3.10 Explain the role of a Process control block (PCB).

3.11 Show the changes in the process control Block(PCB) when

   a. A new process is created and

   b. A running process is suspended.

3.12 What is the use of a process control block? Discuss the changes in the PCB chains when

   a. A process makes an I/O request

   b. A process completes an I/O Operation.

3.13 With the help of block diagrams, explain the flow of control between two processes during process switching.

3.14 What happens when process context is switched? Is it an over-head?

3.15 Explain the function of the system calls along with the process state diagrams.

3.16 Compare preemptive and non preemptive scheduling methods and explain in details the priority based scheduling technique.

3.17 Explain why real-time systems require a pre-emptive scheduling policy.

3.18 In a dynamic situation how is the next burst of processing time estimated?

3.19 Explain the concepts of multitasking.

3.20 What are the motivations for short term, medium term and long term scheduling levels? Explain with block schematics.

3.21 Compare and contrast the round-robin, pre-emptive policy with shortest job first pre-emptive policy.

3.22 Define throughput and turn around time.

3.23 Explain starvation. When and how starvation may occur?

3.24 Typically what is the process information Unix OS maintains?

3.25 Explain the procedure to kill a process.