Unit – IV : Introduction to OS, Process Management, Deadlocks

Q.1 Find out the safe sequence for the execution of three processes for following example.

Maximum Resources R1 = 4, R2 = 4

Allocation Matrix Maximum Matrix

R1 R2 R1 R2

P1 1 0 1 1

P2 1 1 2 3

P3 1 2 2 2

Calculate the need matrix 10.

Q.2 Define process. Explain various states of process with process state diagram for five state process model.

Q.3 Consider the following processes where arrival and burst time is as follows:

Process Burst time Arrival Time

P1 3 0

P2 6 2

P3 4 4

P4 5 6

P5 2 8

Calculate:

1. Average waiting time
2. Average run time

If the processes are schedules

1. FCFS
2. SJF

Q.4 Explain inter process communication. Explain different IPC problems.

Q.5 Explain process and threads in detail.

Q.6 Explain dead lock. Explain different methods to avoid deadlock.

Q.7 What is scheduling and scheduling criteria? What are different types of scheduling? Explain any one in detail.

Q.8 What are deadlocks? Describe in brief various methods of deadlock prevention.

Q.9 Define Process. Explain process state transition diagram.

Q.10 explain pre-emptive and non-pre-emptive scheduling.

Q.11 Explain with diagram how do deadlock occure and how to avoid it.

Q.12 Write a short note on following:

a. Process Control Block

b. Critical section

c. Round Robin Scheduling

Q.13 What are deadlocks? How deadlocks avoided in operating system. Explain it with suitable example.

Q.14 Draw and explain process state transition.

Q.15 Explain pre-emptive and non-pre-emptive concept with example.

Q.16 Explain ostrich algorithm.

Q.17 Explain Inter Process Communication with their problems and solution.