

## **CM1604 Computer Systems Fundamentals**

### **Tutorial** \_\_\_\_\_

1. What are the different states of a process that is managed by the Operating System? Draw a diagram to illustrate the transitions.
2. Following is a list of processes in ready states along with the service times.
  - a. Write down the order of execution when the scheduling algorithms is
    - i. First come first serve (FCFS)
    - ii. Shortest job first (SJN)
  - b. By means of a Gantt chart or any other means, Find the completion time of each process for each of the following scheduling algorithms.
    - i. First come first serve
    - ii. Shortest job next
    - iii. Round robin

Process	Service time
P1	85
P2	175
P3	65
P4	120
P5	90

3. Consider the following list of cylinder requests to answer the following questions.

90, 45, 56, 27, 64, 93, 4, 89

List the order in which the seek is handled for each of the following disk scheduling algorithms.

Also calculate the total seek time for each.

**Assume** that at the initial, the disk head is positioned at cylinder number 50 and the cylinder has 100 tracks (numbered 0-99).

- a. First come first serve (FCFS)
- b. Shortest Seek time first (SSTF)
- c. SCAN
- d. C-SCAN
- e. LOOK
- f. C-LOOK

To answer c, d, e and f **assume** that the disk head is moving towards the higher cylinder number.

