IInd class Test

CS 203 M.M. 15

Time 1 hr

note: Attempt all Questions

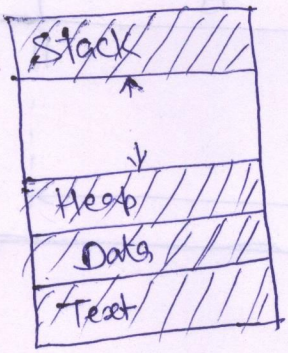
Q) what is process? Explain in brief. (5)

Sol"

Process:

A process is basically a program in execution. The execution of a process must progress in a sequential fashion.

when a program is loaded into the memory and it becomes a process, it can be divided into four section - stack, heap, text and data. The following image shows a simplified layout of a process inside main memory.



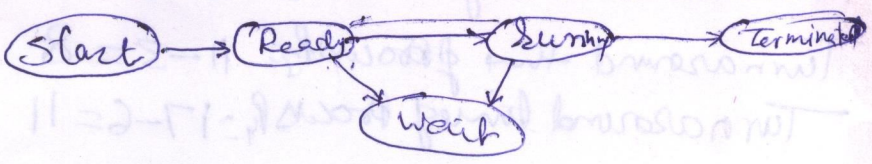
Stack - The process stack contains the temporary data such as method/function parameters, return address and local variables.

~~Text~~ - This includes the current activity represented by the value of program counter and the contents of the processor's register

~~Text~~ Heap - This is dynamically allocated memory to a process during its run time.

Data - This section contains the global and static variables.

Process executes in five states as follows -

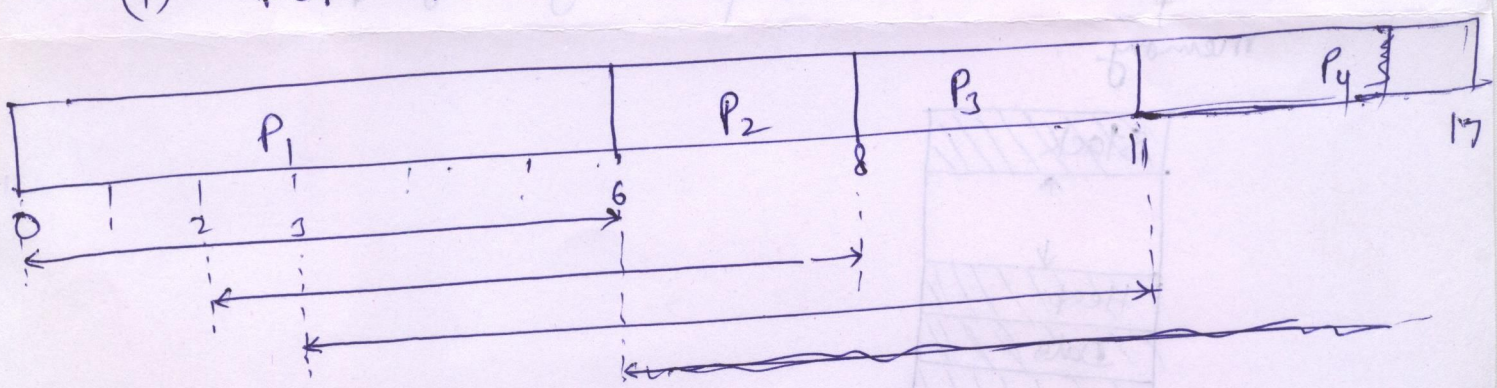


Q3 find out the waiting time and Turnaround time of Process P_1, P_2, P_3, P_4 using fcfs algorithm

Process NO	~~Arrival~~ Burst time	Arrival time
P_1	6	0
P_2	2	2
P_3	3	3
P_4	3	6

Sol"

(1) for fcfs the Gantt chart will be



Waiting time of Process $P_1 = 0$

Waiting time of Process $P_2 = 6 - 2 = 4$

Waiting time of Process $P_3 = 8 - 3 = 5$

Waiting time of Process $P_4 = 11 - 6 = 5$

Turnaround time of Process $P_1 = 6 - 0 = 6$

Turnaround time of Process $P_2 = 8 - 2 = 6$

Turnaround time of Process $P_3 = 11 - 3 = 8$

Turnaround time of Process $P_4 = 17 - 6 = 11$

Q3 Write short notes any of two :— $(2\frac{1}{2} \times 2)$

1. Throughput
2. Turnaround time.
3. Waiting time
4. Response time.

Sol':

1. Throughput —

Throughput means the efficiency of the scheduling algo. that is no of process completed per unit time.

So Throughput = $\frac{\text{no of process completed}}{\text{time taken}}$.

2. Turn around time —

Turnaround time means amount of time to execute a particular process. Turnaround time of every process is calculated by subtraction of finish time and arrival time of that process.

3. waiting time — amount of time a process has been waiting in the ready queue

waiting time of every process is calculated by subtraction of start time and arrival time of that process.

4. Response time —

Response time amount of time it takes from when a request was submitted until the first response is produced, not output (for time-sharing environment)