(Please write your Roll No. immediately)

Mid Term Examination

B.Tech (CSE/IT)- 6th Semester **April 2022**

Paper Code:ETCS-304 **Subject: Operating Systems**

Time: 1 ½ Hrs. **Max. Marks: 30**

Note: Attempt Q. No. 1 which is compulsory and any two more questions from remaining.

Q.1. Answer all the following questions briefly: **[2 X 5 = 10]**

a) Compare Parallel Systems and distributed Systems.

b) Justify the statement "OS works as a resource manager".

c) Differentiate between Preemptive and non-Preemptive scheduling.

d) Calculate the average amount of internal fragmentation paging scheme may suffer w.r.t to page size.

e) Draw process state diagram.

Q.2.

a) Define interrupts. Why interrupts are important for the functioning of the system. **[5]**

b) In a byte addressable system, the logical address space is of 24 bit where as physical address space is 16 bit. The frame size is 1 KB and each entry in page table requires 2 bytes. Find (i) No. of frames (ii) No. of pages (iii) No. of pages required to store the page table.

Q.3.

a) Differentiate paging and segmentation with the help of neat diagrams. **[5]**

b) Consider a system with following data **[5]**

Process	Burst time in ms	Arrival Time in ms
P0	6	0
P1	2	2
P2	1	4
P3	2	5

Calculate average waiting time and turn around time for SJF and SRTF algorithms.

Q.4.

a) Define following (i) PCB (ii) Context switching (iii) Swapping (iv) Thread (v) IPC **[5]**

b) Assume 3 frames available. The page reference string is 1,2,1,3,2,1,4,5,2,3,1,6,5,4,3,2,1. Calculate no. of page faults in case of FIFO and LRU page replacement algorithms in case of pure demand paging. **[5]**

*******ALL THE BEST*******