

(Please write your Roll No immediately)

Roll No: _____

First - Term Examination (Feb-March, 2019)

VIth Semester [B.Tech]

Paper Code: ETCS-304

Time: 1.5 Hrs.

Subject: Operating System

Max. Marks: 30

Note: Q. No.1 is compulsory and attempt any two questions from the rest.

Q.1 (a) What do you mean by Real Time System? Discuss its both types.

(b) Difference between Long Term Scheduler and Short-Term Scheduler.

(c) What do you mean by process and thread? Differentiate both.

(d) What is thrashing and how to encounter if it occurs?

(e) What are the requirements of any solution to the critical section problem?

(5*2=10)

Q.2 (a) Consider the set of processes P₁ to P₅ with the following CPU burst times. Find the average turnaround time and average waiting time for Round Robin scheduling technique with time quantum of 2 units. (6)

Process	CPU Burst Time	Arrival Time
P ₁	3	1
P ₂	6	2
P ₃	4	4
P ₄	5	6
P ₅	2	8

Q.2 (b) what is Virtual memory and how Overlay concept works, explain in short with example. (4)

Q3. (a) For a paged system, TLB hit ratio is 0.8. Let the RAM access time 't' be 100ns and the TLB access time 'T' be 50ns. Calculate effective memory access time (with TLB). (5)

(b) Calculate total number of page fault that will occur while processing the page reference string given below:
4,6,7,1,6,7,1,2,6,2,0,3,1,4,2 using Optimal page replacement policy, when page frames are Three. (5)

4. A process contains a logical address space of 4096 bytes. Main memory size is 512 bytes. If the process is divided into fixed size partition of 16 byte each then a) What will be size of offset/displacement bits? b) How many pages are there in the process? c) How much internal fragmentation will occur? d) Find out the number of entries in general page table e) How many entries will be there if the page table is an inverted one then? (10)