Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER– II EXAMINATION – WINTER 2019

Subject Code: 3620003 Date: 23/12/2019

Subject Name: Operating Systems

Time: 02:30 PM TO 05:00 PM Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q-1 **(A)** Define the following terms (Attempt any seven). **07**

1.dispacher
2.interrupt
3.internal fragmentation
4.kernel
5.multitasking
6.difference between process and thread
7.starvation
8.difference between strong and weak semaphore

(B) What is process? Explain seven state Process Model with diagram. **07**

Q-2 **(A)** 1.what is PCB? Explain functions of PCB. **03**

2.what is OS? Explain functions of OS. **04**

OR

What is process? Explain various reasons for creation and termination of process. **07**

(B) Discuss ULT and KLT in detail with figure. **07**

Q-3 **(A)** Explain Dining philosopher problem using semaphore. **07**

(B) What is deadlock? Explain necessary conditions to avoid Deadlock. **07**

OR

(A) What is TLB? Explain working of TLB with flowchart. **07**

(B) Explain Reader/Writer problem. Give solution using semaphore if readers have priority. **07**

Q-4 **(A)** Define paging.explain logical to physical address translation mechanism in paging with example. **07**

(B) Given the following data,calculate turnaround time for each process and average turnaround time for all processes using FCFS and SRTN. **07**

Process	A	B	C	D	E
Arrival Time	0	2	4	6	8
Service Time	3	6	4	5	2

OR

(A) List and explain file allocation methods. **07**

(B) Given the following data, calculate turnaround time for each process and average turnaround time for all processes using SPN and RR. **07**

Process	A	B	C	D	E
Arrival Time	0	2	4	6	8
Service Time	3	6	4	5	2

Q-5	**(A)**	What is the need of Disk scheduling? Describe different Disk scheduling policies.	**07**
	(B)	What is scheduler? Explain long term, Medium term andShort term scheduler in detail.	**07**

OR

	(A)	Explain RAID in detail.	**07**
	(B)	Explain fetch policy and replacement policy in memory management.	**07**

****