

Reg. No.



MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

V SEMESTER B.TECH. (COMPUTER SCIENCE AND ENGINEERING)

INSEMESTER EXAMINATIONS, NOV 2021

SUBJECT: Operating Systems [CSE 3153]

REVISED CREDIT SYSTEM

(19/11/2021), 4 PM – 5:30 PM

Time: 1 Hour 30 Minutes

MAX. MARKS: 20

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.

1 Explain the following operating system services: user interface, I/O operations, error detection, communications **3M**

2 Discuss how the following pairs of scheduling criteria conflict in certain settings. **3M**

- a. CPU utilization and response time:
- b. Average turnaround time and maximum waiting time:
- c. I/O device utilization and CPU utilization.

3 Illustrate the life cycle of processes using scheduling queues. Give diagrams wherever necessary. **3M**

4 A system has 14 resources of A type, 14 resources of B type and 15 resources of C type. Apply Banker's algorithm and check whether the system is safe using Bankers algorithm. **3M**

Processes	MAX			Allocation			Available		
	A	B	C	A	B	C	A	B	C
P1	2	7	5	2	3	4	?	?	?
P2	2	4	4	4	2	3			
P3	2	5	5	1	4	4			
P4	7	6	4	3	3	4			

2M

5A Distinguish the difference between user view and system view of Operating system. **2M**

5B Write the notable differences between multi-programming and multi-tasking. **2M**

6 Explain different protocols to prevent the deadlock with example. **4M**