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Uni. Roll No. ....

Program: B.Tech. (Batch 2018 onward)   16 JUN 2023

Semester: 4th

Name of Subject: Operating Systems

Subject Code: PCCS-105

Paper ID: 16215

Scientific Calculator is Not Allowed

Time Allowed: 03 Hours   Max. Marks: 60

NOTE:

1) Parts A and B are compulsory
2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
3) Any missing data may be assumed appropriately

Part – A   [Marks: 02 each]

Q1.

a)   List the key features of Microkernel Operating System.

b)   Define turn-around time.

c)   What is race condition?

d)   How can deadlocks be avoided?

e)   How buffering can improve the performance of Computer system?

f)   Differentiate between pre-emptive and non-pre-emptive processes.

Part – B   [Marks: 04 each]

Q2.   Draw a neat diagram of process control block and explain it.

Q3.   Write note on file access method.

Q4.   Briefly explain security features of WINDOWS operating system.

Q5.   Shown below is the workload for 5 jobs arriving at time zero in the order given below

Job	Burst Time
1	10
2	29
3	3

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P.T.O.

P2	2	6	3	0	3	0
P3	2	2	2	2	1	1
P4	4	6	3	1	1	1

a. Calculate the available vector.
b. Calculate the Need matrix
c. Is the system in a safe state? If so, show one sequence of processes which allows the system to complete. If not, explain why.
d. Given the request $(1, 2, 0)$ from Process P2. Should this request be granted? Why or why not?

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