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TMC–103

M. C. A. (FIRST SEMESTER)
MID SEMESTER
EXAMINATION, Jan., 2023

OPERATING SYSTEM

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any ***one*** of the sub-questions.

(ii) Each sub-question carries 10 marks.

1. (a) Define OS. Explain the different types of OS with example. (CO1)

OR

(b) Define Kernel. Explain the various types of Kernels with example. (CO1)

2. (a) Draw and explain the various states of a process. (CO1/CO2)

P. T. O.

OR

(b) Differentiate between of the following : (CO1/CO2)

(i) Multiprogramming *vs.* Multitasking OS

(ii) System call *vs.* Functions

3. (a) Draw and explain the PCB. Also explain the PCB in memory. (CO2)

OR

(b) Differentiate between of the following : (CO1)

(i) Process *vs.* Threads

(ii) Open-source *vs.* Commercial OS

4. (a) Explain different types of schedulers and various queues. (CO1/CO2)

OR

(b) Calculate Average waiting time, Average TAT, throughput, CPU utilization for the following : (CO1/CO2)

Process	Arrival Time	CPU Burst Time (in millisec.)
P_0	3	2
P_1	2	4
P_2	0	6
P_3	1	4

using FCFS scheduling Algorithm.

5. (a) Draw and explain the various services of OS. (CO1/CO2)

OR

(b) Calculate Average waiting time, Average TAT, throughput, CPU utilization for non-preemptive SJF scheduling for the following : (CO1/CO2)

Process	Burst Time
P_1	6
P_2	8
P_3	7
P_4	3

60