PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2021-22 Examination

Semester: 3/4   Date: 01/04/2022
Subject Code: 203105203   Time: 02:00pm to 04:30pm
Subject Name: Operating System   Total Marks: 60

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start a new question on a new page.

Q.1 Objective Type Questions - (Fill in the blanks, one word answer, MCQ-not more than Five in case   **(15)**
of MCQ) (All are compulsory) (Each of one mark)

1. To access the services of operating system, the interface is provided by the_____
a. System calls
b. API
c. Library
d. Assembly instruction

2. The link between two processes P and Q to send and receive messages is called _____
a) communication link
b) message-passing link
c) synchronization link
d) all of the mentioned

3. Which one of the following is a synchronization tool?
a) thread
b) pipe
c) semaphore
d) socket

4. The process to be aborted is chosen on the basis of the following factors?
a. priority of the process
b. process is interactive or batch
c. how long the process has computed
d. all of the mentioned

5. What is the main purpose of the memory management unit?
a) address translation
b) large storage
c) reduce the size
d) provides address space

6. Multithreading is also called as _____

7. Linux is an operating system? True or False

8.A thread is called as _____

9. Which one of the following is FALSE?
a. User level threads are not scheduled by the kernel.
b. When a user level thread is blocked, all other threads of its process are blocked.
c. Context switching between user level threads is faster than context switching between kernel level threads.
d. Kernel level threads cannot share the code segment

10. Process is _____ Activity and Program is _____ Activity.

11. Define Operating System

12. Difference between Linux and Windows.

13. What is the Race Condition and Critical section?

14. What is Directory?

15. Define the Following term: 1) CPU Utilization, 2) Turn-around Time

Q.2 Answer the following questions. (Attempt any three) **(15)**

A) Explain Three Types of Schedulers.

B) Explain producer and consumer problems.

C) Difference between Disk Management and File Management.

D) Differences between Process and Program.

Q.3 A) Write a short note on various generations of Operating System. **(07)**

B) Explain in detail the Process State Model. **(08)**

OR

B) Apply the Round Robin to the following process P0, P1, P2, P3, P4 in the given table. where **(08)**
Time Quantum =2
Mode: Preemptive

Process	Arrival Time	Burst Time
P0	0	5
P1	1	3
P2	2	1
P3	3	2
P4	4	3

Find the Average Waiting time?
Find the Average Turnaround time?

Q.4 A) Difference between Contiguous and Noncontiguous Memory allocation. **(07)**

OR

A) Explain Page Replacement Algorithm with Example. **(07)**

B) What is the Deadlock ? Explain in detail. **(08)**