Roll No. : .....

Total No. of Questions : **11**] [Total No. of Printed Pages : **3**

BPP–1093

M.Sc. (Previous) Examination, 2022

COMPUTER SCIENCE

MCS–104

(Operating Systems)

*Time : **3** Hours*] [*Maximum Marks : **50***

Section–A **(Marks : 2 × 10 = 20)**

Note :– Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section–B **(Marks : 3 × 5 = 15)**

Note :– Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

Section–C **(Marks : 5 × 3 = 15)**

Note :– Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

Section–A

1. (i) What do you mean by Context Switch ?

   (ii) Explain Process States.

   (iii) What do you mean by Pre-emptive Scheduling ?

(iv) Explain Throughput.

(v) What do you mean by Critical Section Problem ?

(vi) What do you mean by Avoidance ?

(vii) Explain Virtual Memory.

(viii) What do you mean by Directory Structure in Linux ?

(ix) Explain different file permissions used in Linux.

(x) What is the use of pwd command in Linux ?

Section–B

2. What do you mean by Threads ? Explain with suitable example.

Or

What is Process Scheduling ? Explain types of schedulers.

3. Explain SJF with suitable example.

Or

Explain Round Robin Scheduling with suitable example.

4. Explain Banker's Algorithm with example.

Or

What is Semaphores ? Write simple solution to Readers – Writers problem.

5. What do you mean by Shell and Kernel in Linux ? Explain the features of Linux.

Or

Explain physical and virtual address space with suitable example.

6. Write a shell script to print the reverse of given input number.

Or

Explain the following commands with syntax and example :

(a) man

(b) uname

(c) chmod

Section–C

7. What is Operating System ? Explain distributed system and real time system. Describe any *two* functions of operating system.

8. Calculate average waiting time in shortest job first (SJF) and priority scheduling algorithm as given scenario :

Process	Burst Time (ms)	Priority
P1	7	2
P2	5	3
P3	3	4
P4	6	1

9. What is Deadlock ? Explain its prevention technique. How recovery from deadlock performed ? Explain.

10. What do you mean by Paging ? Explain LRU page replacement algorithm with example.

11. Explain different loop structure supported by linux ? Explain with suitable examples.