Roll No. : .....

Total No. of Questions : **16**] [Total No. of Printed Pages : **3**

SEM2015

M.Sc. (IInd Semester) Examination, 2021

COMPUTER SCIENCE

Paper - MCS-203

(Operating System)

Time : 1½ Hours] [*Maximum Marks : **40***

Note :– The question paper contains three Sections.

Section–A **(Marks : 1 × 10 = 10)**

Note :– Answer all the *ten* questions carries **1** mark each. The answer should not exceed **50** words.

Section–B **(Marks : 3 × 5 = 15)**

Note :– Answer *five* questions by selecting at least *one* question from each Unit. Each question carries **3** marks. Answers should not exceed **200** words.

Section–C **(Marks : 5 × 3 = 15)**

Note :– Answer *three* questions by selecting *one* question from each Unit. Each question carries **5** marks. The answer should not exceed **500** words.

Section–A

1. (i) Define System Calls.

   (ii) What do you mean by Threads ?

(iii) Define Turnaround Time.

(iv) What is the purpose of using Semaphores ?

(v) Write any *three* page replacement techniques used in operating system.

(vi) What do you mean by Virtual Memory ?

(vii) For which purpose, opt command is used ?

(viii) What will following command do, if executed on terminal in Linux ?

$cat abc.txt.

(ix) Which command is used to create a new directory ?

(x) Write one main difference between cp and mv.

Section–B

Unit–I

2. Explain Round Robin scheduling algorithm.

3. Explain the concept of context switch.

4. What are main functions of on operating system ?

Unit–II

5. Describe the method to avoid deadlock occurrence.

6. Explain the concept of Paging.

7. Explain the concept of critical section problem.

Unit–III

8. Explain the output of command ls-l.

9. Write a shell script to find the sum of first 10 natural numbers.

10. Explain directory structure in Linux.

Section–C

Unit–I

11. Take a suitable example of shortest job first scheduling in which 5 processes reach at the interval of 2 time units and execution time of each process is same, in the system. Show the same using Gantt Chart for execution of all the processes.

12. Explain the concept of MLQ with feedback in detail.

Unit–II

13. Explain simple solution to Readers-Writers problem in detail.

14. Describe Banker's algorithm with a suitable example.

Unit–III

15. Write a shell script to find the factorial of an entered positive integer.

16. Explain the usage of chmod command with different options and examples.