Sridora Caculo College of Commerce & Management Studies

First Year B.C.A. Semester-II Supplementary Examination, October 2020

OPERATING SYSTEM CONCEPTS

Duration: 2 Hours   Total Marks: 30

Instructions: *1)* **All** *questions are* **compulsory**
                    2) Figures to the **right** *indicate* **full** *marks*

Q.1) Answer the following (ANY FIVE):   (5X2=10)

   a) List the different services provided by Operating System to its users.

   b) Specify any 2 requirements that a solution to the critical section
      problem must satisfy.

   c) Consider the following page-reference string:
        1 3 2 1 4 2 5 3 2
      How many page faults would occur in the following replacement
      algorithm by assuming 3 page frames : i) Optimal

   d) Define:
      i) Real time OS
      ii)Time-sharing OS

   e) Distinguish between Threads & Process. (2 points)

   f) Explain the Access Matrix Model of protection.

   g) What is Thrashing & Compaction w.r.t Memory Management?

   h) Mention different types of Security Threats.

Q.II) Answer the following. (ANY FOUR):   (4X5=20)

   a) Discuss in brief the deadlock prevention techniques.

   b) With the help of a neat diagram, explain Paging scheme of
      Memory Management.

c) For the following processes and CPU burst time, draw Gantt charts illustrating the execution of processes for the following:
 a) Round Robin Scheduling (*Time Slice = 3 ms*)
  b) FCFS Scheduling

Processes	Burst Time
P1	7ms
P2	3ms
P3	5ms
P4	2ms

Which algorithm gives the minimum average waiting time?

d) With the help of a neat diagram, explain Segmentation scheme of Memory Management.

e) Explain the different types of disk scheduling algorithms.

f) What is Distributed Operating System? What are the reasons for building distributed systems?

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