BCA 401(O)

B.C.A (Semester- IV) Exam.-2014
(Old Course)
Paper: I
Basics of Operating System

Time: Three Hours]   [Maximum Marks: 75

Note: Section A is compulsory. Attempt seven questions from Sec B , One question from Section C.

Section-A

1. Consider the following set of processes with the length of CPU burst and priority given.

Process	Burst time in Milliseconds	Priority
P_1	8	3
P_2	1	1
P_3	2	2
P_4	5	4

Assuming processes have arrived in order P_1, P_2, P_3, P_4 all at time 0.

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12. Explain deadlock using resources allocation graph.

SECTION C

13. Given the ahead reference string denoting the page numbers and three frames. Show the page fault using diagrams and write the number of page faults for the following page replacement algorithm.

   a. FIFO

   b. Optimal page replacement algorithm

   c. LRU

   Reference string : 8 012 0 30 4 2 30

14. Define the following terms

   a. Fragmentation

   b. Address binding

   c. Thrashing

Draw Gantt charts to illustrate execution of processes following below given scheduling algorithm

   a.   FCFS

   b.   SIF

   c.   RR (Quantum = 1)

   d.   Pre-emptive priority (smaller priority number implies high priority)

2.   a.   What is process? Explain different states of process with the help of state diagram.

      b.   What do you mean by deadlock.

SECTION B

3.   What do you understand by multi programming? How is it useful?

4.   Give the name of four services provided by OS.

5.   Distinguish between a I/o bound process and a CPU bound process.

6.   What is need for network operating system?

7.   Explain the term 'BOOTSTRAPPING'

8.   Define essential properties of the following types of operating system.

      a.   Time sharing

      b.   Network

9.   Explain context switching? How can the context-switching-time reduced?

10.   What are the performance criteria for CPU scheduling algorithm?

11.   Define the following term

      a.   Throughput

      b.   Turnaround time

      c.   Response time