

Vidya Vikas Mandals'

Shree Damodar College of Commerce and Economics, Margao, Goa  
First Year BCA - Semester II, End Semester Examination – April 2015

OPERATING SYSTEM CONCEPTS(BCA 202)

Duration: 2 hours

Max.Marks: 50

- Instructions: 1) All questions are compulsory  
2) Start each new question on a fresh page  
3) Figures to the right indicate full marks

**Q.1 A) Select the right choice** (5 x 1= 5)

- a) A process is selected from the \_\_\_\_\_ queue by the \_\_\_\_\_ scheduler, to be executed by CPU.  
i) blocked, short term      ii) wait, long term      iii) ready, short term  
iv) ready, long term
- b) The address generated by the CPU is referred to as \_\_\_\_\_.  
i) physical address      ii) logical address      iii) Neither a nor b
- c) The time taken to move the disk arm to the desired cylinder is called the \_\_\_\_\_.  
i) positioning time      ii) random access time      iii) seek time  
iv) rotational latency
- d) Swap space exists in \_\_\_\_\_.  
i) primary memory      ii) secondary memory      iii) CPU  
iv) none of the mentioned
- e) A process is thrashing if \_\_\_\_\_.  
i) it is spending more time paging than executing  
ii) it is spending less time paging than executing  
iii) page fault occurs  
iv) swapping cannot take place

**Q.1 B) Define the following in 2-3 lines**

- a) Dispatcher ( 2 )  
b) Intruder ( 1 )  
c) Worm ( 2 )

**Q.2) Answer the following**

- a) Explain any 2 services provided by the Operating System. ( 2 )  
b) Explain the SSTF Disk Scheduling Algorithm. ( 3 )  
c) Discuss in detail the various scheduling criteria's considered for selecting the "best" scheduling algorithm. ( 5 )

**Q.3) Answer the following**

- a) Discuss the importance of Mutual Exclusion? ( 2 )
- b) What are the 3 basic approaches to recover from a deadlock? ( 3 )
- c) Suppose that the processes arrive in the order: ( 5 )

<u>Process</u>	<u>Arrival Time (ms)</u>	<u>CPU Burst Time (ms)</u>
P1	0	5
P2	1	3
P3	2	8
P4	3	6

Draw the Gantt chart and calculate the average waiting time for Round-robin Scheduling Algorithm with a time quantum of 2 ms.

**Q.4) Answer the following**

- a) Discuss any 4 File Attributes. ( 2 )
- b) What is Public-Key Cryptography? Explain in detail. ( 3 )
- c) Explain the concept of Two-Level Directory Structure with a diagram. ( 5 )

**Q.5) Answer the following**

- a) Explain any 2 User Authentication Methods. ( 2 )
- b) Discuss some of the advantages of Web Operating System. ( 3 )
- c) Explain in detail the types of Distributed Systems. ( 5 )

\*\*\*\*\*