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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)
