8542/SCS8C52/ SCS9C52　　　　NOVEMBER 2011

OPERATING SYSTEM

(For those who joined in July 2008 and 2009 and after)

Time : Three hours　　　　　　Maximum : 75 marks

SECTION A — (10 × 1 = 10 marks)

Answer ALL questions.

All questions carry equal marks.

Choose the right answer :

1. In the 1960s OS has been defined as
   (a) software that controls the hardware
   (b) software that controls only CPU
   (c) firmware that controls the hardware
   (d) firmware that controls only CPU

2. A Process is said to be in the ——————— state if it is executing on a processor.
   (a) ready　　　　　(b) waiting
   (c) running　　　　(d) blocked

3. The technique of each process accessing the shared data excludes all other from doing so simultaneously is called
   (a) critical exclusion　(b) mutual exclusion
   (c) semaphores　　　(d) deadlock

4. A ——————— semaphore is a semaphore that is initialized to an integral value greater than zero and commonly greater than one.
   (a) Starvation　　　(b) Binary
   (c) Counting　　　　(d) Digital

5. A process in a multiprogramming system is said to be in a state of ——————— if it is waiting for a particular event that will not occur.
   (a) critical　　　　(b) execution
   (c) deadlock　　　　(d) processing

6. ——————— scheduling(s) is /are non preemptive scheduling.
   (a) Round robin
   (b) FCFS
   (c) Highest-Response-Ratio-Next
   (d) All the above

7. Voluntary page release command issued to ———————.
   (a) to access the page
   (b) to free the page frame
   (c) to free the page size
   (d) to block the free size

8. Under page replacement, each page in main memory has an equal likelihood of being selected for replacement
   (a) FIFO　　　　　(b) LFU
   (c) LRU　　　　　(d) RAND

9. The data is accessed by a series of read-write-head, ——————— head per disk surface.
   (a) two　　　　　(b) one
   (c) no　　　　　(d) three

10. The expansion of DASD is ———————.
    (a) Direct Access Storage Device
    (b) Data Access Storage Device
    (c) Direct Access Storage Data
    (d) Direct Allocation of Storage Device

SECTION B — (5 × 7 = 35 marks)

Answer ALL questions, Choosing either (a) or (b).

11. (a) Explain about the operating system components.

    Or

    (b) Write note on process management.

12. (a) Explain how mutual exclusion and thread synchronization are enforced using semaphores.

    Or

    (b) Explain Dead lock in spooling systems.

13. (a) Write about deadlock prevention in brief.

Or

(b) Explain briefly dead lock detection.

14. (a) Explain real memory organization.

Or

(b) Compare Contiguous and Non-contiguous memory allocation.

15. (a) Explain file system component of OS.

Or

(b) Write about any five file system functions.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write an essay on the Inter process communication

17. Explain the two versions of Mutual exclusion primitives.

18. Discuss Deadlock avoidance and Bankers algorithm.

19. Enumerate the following Page replacement strategies.

(a) FIFO

(b) LRU

(c) LFU

20. Write an essay on the directories and metadata in file system.

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