SUBJECT CODE: CS/MC/OS54

B.C.A. DEGREE EXAMINATION – NOVEMBER 2011
FIFTH SEMESTER

REG. NO. _____

COURSE   : MAJOR CORE
PAPER   : OPERATING SYSTEM – I
TIME   : 20 MINUTES   MAX. MARKS: 20

SECTION – A

ANSWER ON THE QUESTION PAPER ITSELF

Answer all questions: (20X1=20)

I.   **Choose the correct answer**

1. Round robin scheduling is essentially the preemptive version of _____.
   a) FIFO   b)Shortest job first   c) Shortest remaining   d) Longest time first

2. A page fault occurs
   a) when the page is not in the memory   b) when the page is in the memory
   c) when the process enters the blocked state d) when the process is in the ready state

3. Among the following _____ will determine your choice of systems software for your
   Computer.
   a) Is the applications software you want to use is compatible with it? b) Is it expensive?
   c) Is it compatible with your hardware ?   d) Both 1 and 3

4. Let S and Q be two semaphores initialized to 1, where P0 and P1 processes the
   following statements
   wait(S);wait(Q); ---; signal(S);signal(Q) and wait(Q); wait(S);---;signal(Q);signal(S);
   respectively. The above situation depicts a _____ .
   a) Semaphore   b) Deadlock   c) Signal   d) Interrupt

5. What is a shell ?
   a) It is a hardware component   b) It is a command interpreter
   c) It is a part in compiler   d) It is a tool in CPU scheduling

6. In the blocked state _____
   a) the processes waiting for I/O are found   b) the process which is running is found
   c) the processes waiting for the processor are found   d) none of the above

7. What is the memory from 1K - 640K called ?
   a) Extended Memory b) Normal Memory   c) Low Memory   d) Conventional Memory

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8. Virtual memory is _____.
   a) An extremely large main memory b) An extremely large secondary memory
   c) An illusion of extremely large main memory d) A type of memory used in super
      computers.

9. If the Disk head is located initially at 32, find the number of disk moves required with
   FCFS if the disk queue of I/O blocks requests are 98,37,14,124,65,67.
   a) 310   b) 324   c) 315   d) 321

10. Multiprogramming systems _____.
    a) Are easier to develop than single programming systems b) Execute each job faster
    c) Execute more jobs in the same time d) Are used only on large main frame
       computers

II Fill up the Blanks

11. The problem of thrashing is effected scientifically by _____.

12. The state of a process after it encounters an I/O instruction is _____.

13. The number of processes completed per unit time is known as _____.

14. Which technique was introduced because a single job could not keep both the CPU and
    the I/O devices busy?

15. A critical region is _____.

III Write true or false

16. demand paging   process control block

17. PCB   The mechanism that bring a page into memory
                                     only when it is needed

18. FIFO scheduling   Non Preemptive Scheduling

19. A thread   is a high level abstraction over Semaphore.

20. Monitor   is a lightweight process where the context
                                     switching is low

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TIME   : 2 HOURS & 40 MINUTES   MAX. MARKS: 80

SECTION - B
Answer any Eight questions   (8X5=40)

1. Explain OS structure

2. Write notes on Pre-emptive scheduling

3. What is Deadlock? How can you prevent it?

4. Explain internal and external fragmentation algorithm with example

5. Explain any two allocation methods

6. Write short notes on transforming I/O requests to hardware operations

7. Describe free space management in files

8. Explain DMA

9. Write short notes on kernel I/O subsystems

10. Write short notes on Monitors.

SECTION - C
Answer any Four questions   (4X10=40)

11. What is IPC? Discuss with producer consumer problem.

12. What are semaphores? Explain how they are used to perform synchronization.

13. Explain any two page replacement algorithms with examples.

14. Write short notes on application I/O interface.

15. Write briefly about file access methods.

16. Write short notes on threads and inter process communication

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