UG

BIRLA INSTITUTE OF TECHNOLOGY, MESRA : RANCHI
(END SEMESTER EXAMINATION)

CLASS : BTECH
BRANCH : EEE
TIME : 2.00 HOURS

SEMESTER : VI
SESSION : SP-22
FULL MARKS : 50

SUBJECT: CS 303 OPERATING SYSTEM

INSTRUCTIONS:

1. This question paper contains 2 sections, section A and B namely.
2. Section A contains 20 Multiple Choice Questions 1.5 marks each.
3. Section B contains 5 questions of 4 marks each.
4. The missing data, if any, may be assumed suitably.

Section A

1. The systems having processors in close communication and communicate via shared memory are
   a) Distributed systems
   b) Parallel systems
   c) Real time systems
   d) None of the above

2. The systems have a minimum use of secondary storage
   a) Multiprogramming
   b) Time-sharing systems
   c) Real Time Systems
   d) Distributed Systems

3. The time it takes to save one job and start the another job is called as
   a) Dispatch latency
   b) Context Switching
   c) Swap time
   d) None

4. The percentage of times that the page is found in the Translation Look Aside buffer (TLB) is
   a) Page fault
   b) Thrashing
   c) Convey effect
   d) Hit ratio

5. Linked allocation method supports
   a) Direct access method
   b) Sequential access method
   c) Random access method
   d) All above

6. Bypasses CPU to transfer data directly between I/O device and memory
   a) Direct memory access (DMA)
   b) Random memory access
   c) Real Memory access
   d) Ignore Memory access

7. First-fit and best-fit better than worst-fit in terms of
    a) Speed and storage utilization
    b) Throughput
    c) Context switching
    d) All above

8. Allocated memory may be slightly larger than requested memory; this size difference is memory internal to a partition, but not being used is
    a) Internal fragmentation
    b) External fragmentation
    c) Zero fragmentation
    d) Full fragmentation

9. Address generated by CPU is divided into two tuples
    a) page number , frame number
    b) page number, page offset
    c) fame number, page offset
    d) frame number, frame offset

10. If a resource allocation graph for a multiple instance resources types contains cycle then there
    a) Must be deadlock
    b) Possibility of deadlock
    c) No deadlock at all
    d) Can't say

11. Deadlock _____ requires that the system has some additional a priori information available
    a) detection
    b) recovery
    c) avoidance
    d) Ignore

12. Programming language construct that provides equivalent functionality to that of semaphores and is easier to control is called as
    a) Destop
    b) Semaphore
    c) Class
    d) Monitor

13. All the processes waiting for the processor to be allocated to them are said to in
    a) New state
    b) Ready state
    c) Running state
    d) Waiting state

14. The short process waiting behind a long process to finish results in high average waiting time in FCFS algorithm is called as
    a) BeLady's Anamoly
    b) Convoy effect
    c) Context switching
    d) Thrashing

15. Device controller informs CPU that it has finished its operation by causing
    a) Interrupt
    b) Signal
    c) Handle
    d) Wait

16. The degree of multiprogramming is controlled by
    a) CPU scheduler
    b) Job Scheduler
    c) Medium Term Scheduler
    d) None

17. Deadlock can be recovered using
    a) Aborting process
    b) Preempting resources
    c) Both a and b
    d) None

18. Seek time is _____ to seek distance
    a) proportional
    b) Inversely proportional
    c) No effect
    d) None

19. _____ performs better for systems that place a heavy load on the disk
    a) FCFS
    b) SSTF
    c) SCAN
    d) LOOK

20. Which of the following is the example of Block device
    a) Keyboard
    b) Mice
    c) Serial Ports
    d) Disk

SECTION B

1. Real- Time systems conflicts with the time- sharing systems. Explain.
2. Consider the given below set of process in a system and determine the average Turn-around time using pre-emptive priority CPU scheduling

Process	Arrival Time	Burst Time	Priority
P1	0.0	10	3
P2	2.0	4	1
P3	3.0	2	3
P4	4.0	1	4
P5	5.0	5	2

3. What is meant by critical section? List and explain the necessary conditions for deadlock.
4. Explain the consequences and solutions of Thrashing.
5. Explain in brief the file allocation methods with their merits and demerits.