C 60100 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER ~~B.Sc.~~ BCA DEGREE EXAMINATION, MARCH 2019

(CUCBCSS)

B.C.A.

BCA 6B 15—OPERATING SYSTEMS

Time : Three Hours Maximum : 80 Marks

Part A

Answer **all** *questions.*

Each question carries 1 *mark.*

1. The concept of ———— helps inkeeping the processor busy, ideally having some job to execute all the time
2. A unit of work done by the processor in a unit time is called ————.
3. The concept of ———— is used by the operating systems to execute programs that are not in the primary memory.
4. The principle of priority scheduling may result in a process getting blocked forever. The scenario is popularly known as ————.
5. The ———— scheduling isoften considered as the best scheduling algorithm for time sharing systems
6. A ———— is a popular synchronization tool used to handle critical section problem
7. In ———— access to files, we use the concept of read n, write n, where n is the block number
8. In ———— method for free space management, the blocks are marked with a 1 or 0 to show the allocation status.
9. A ———— is a memory area that stores data when devices having speed mismatch transfer data
10. ———— is an approach in free space management that stores the address of n free blocks in the first free block

(10 × 1 = 10 marks)

Part B

Answer **all** *questions.*

Each question carries 2 *marks*

11. Explain the need for operating systems and comment on OS as a resource manager.
12. What do you mean by distributed systems ?
13. Write short note on process states.

Turn over

14. Explain critical sections in programs.

15. Write short note on free space management.

(5 × 2 = 10 marks)

Part C

Answer any **five** *questions.*
Each question carries 4 *marks.*

16. Explain the working of time sharing systems.

17. What is segmentation ?

18. Compare and contradict preemptive and non-preemptive scheduling.

19. Explain the concept of files and directories, what are the important attributes of files ?

20. Explain any *two* page replacement algorithms.

21. Explain the need for file protection. Explain any *two* methods of file protection in detail.

22. What do you mean by disk scheduling ? Explain any *two* methods of scheduling the disk.

23. What is spooling ? Explain in detail the need and working principle.

(5 × 4 = 20 marks)

Part D

Answer any **five** *questions.*
Each question carries 8 *marks.*

24. What do you mean by multi-processing systems ? Explain the advantages.

25. Explain PCB and its importance in process execution.

26. What are deadlocks ? Explain the necessary conditions for a dead lock to occur ? How deadlocks can be detected ?

27. Distinguish between paging and segmentation.

28. Explain the directory structures.

29. Explain virtual memory and the method of working.

30. Explain the need for processor scheduling, write short note on FCFS, Round Robin, priority scheduling with example.

31. Write short note on :

    (a) Concept of semaphore and its use.

    (b) Multilevel queue scheduling.

    (c) File access methods.

    (d) Dedicated Vs shared device management techniques.

(5 × 8 = 40 marks)