E 1983 (Pages : 2) Reg. No.....

Name.....

B.C.A. DEGREE (C.B.C.S.S.) EXAMINATION, APRIL 2018

Fifth Semester

Core Course—OPERATING SYSTEMS

(2013 Admission onwards)

Time : Three Hours Maximum Marks : 80

Part A

Answer **all** *questions.* 1 *mark each.*

1. What is semaphore ?
2. What is JCB ?
3. Define process.
4. What is context switch ?
5. Distinguish between CPU burst and I/O burst.
6. What is the role of a dispatcher ?
7. The runtime mapping from virtual to physical address is done by ———.
8. What is the advantage of using dynamic loading ?
9. What is spinlock ?
10. What is the use of inverted page table ?

(10 × 1 = 10)

Part B

Answer any **eight** *questions.* 2 *marks each.*

11. What are the different file operations ?
12. Distinguish between multiprogramming and multitasking.
13. What are the attributes of a file ?
14. Distinguish between job scheduling and CPU scheduling.
15. What are the different states of a process ?
16. Distinguish between pages and frames.
17. What are the different reasons for process co-operation ?
18. Distinguish between logical address and physical address.

Turn over

19. What are the requirements to be satisfied by a solution to critical section problem ?
20. Distinguish between symmetric multiprocessing and asymmetric multiprocessing.
21. What are the different approaches to handle critical sections ?
22. Distinguish between ready queue and device queue.

(8 × 2 = 16)

Part C

Answer any **six** *questions.* 4 *marks each.*

23. Discuss about different modes of execution.
24. Write a note on caching.
25. What are the contents of task control block ?
26. Explain process scheduling.
27. Describe the use of any one synetronization tool.
28. What are the different condition to arise a deadlock situation in a systems ?
29. Discuss about different file access methods.
30. What is segmentation ? How do you implement it ?
31. What are the different types of memory fragmentations ? What is the solution to it ?

(6 × 4 = 24)

Part D

Answer any **two** *questions.* 15 *marks each.*

32. Why operating system is known as resource manager ? Explain.
33. Describe the different models for interprocess communication.
34. Define deadlock. What are the different deadlock handling methods ?
35. Discuss about any three page replacement algorithms.

(2 × 15 = 30)

E 7162 (Pages : 2) Reg. No.....

Name.....

B.C.A. DEGREE (C.B.C.S.S.) EXAMINATION, APRIL 2019

Fifth Semester

Core Course—OPERATING SYSTEMS

(2013 to 2016 Admissions)

Time : Three Hours Maximum Marks : 80

Part A

Answer **all** *questions.*
1 *mark each.*

1. What is throughput efficiency ?
2. What is context switch ?
3. What is mutual exclusion ?
4. What is hit ratio ?
5. What is File Control Block ?
6. Define threads.
7. What is thrashing ?
8. What is race condition ?
9. Distinguish between logical and physical address.
10. What do you mean by authorization ?

(10 × 1 = 10)

Part B

Answer any **eight** *questions.*
2 *marks each.*

11. What are the different states of a process ?
12. What are the various attributes that are associated with an opened file ?
13. Define OS. Explain Time Sharing OS.
14. Differentiate between dynamic linking and dynamic loading.
15. Explain the features of distributed operating systems.

Turn over

16. What is the purpose of paging and page tables ?
17. What are the necessary conditions for the occurance of deadlock.
18. Write the code to implement mutual exclusion condition. In critical section problem using a test set instruction.
19. Describe SJF scheduling policy.
20. Describe sequential file access method.
21. Define degree of multiprogramming.
22. What are the different reasons for process co-operation ?

(8 × 2 = 16)

Part C

Answer any **six** *questions.*
4 *marks each.*

23. What is segmentation ? How do you implement it ?
24. Explain about non-preemptive scheduling policies.
25. Explain Resource Allocation Graph algorithm for deadlock detection with relevant diagram.
26. Explain the different free space management techniques.
27. What are the different goals of an operating system ?
28. Differentiate between linked allocation and indexed allocation.
29. What is a semaphore ? Also give the operations for accessing semaphores.
30. What are the advantages of inter-process communication ? Also explain any *two* implementations of inter-process communication.
31. Write short notes on :
    (a) LRU replacement.
    (b) FIFO replacement.

(6 × 4 = 24)

Part D

Answer any **two** *questions.*
15 *marks each.*

32. Explain the concepts of Virtual Memory.
33. Why Operating System is known as a resource manager / Explain.
34. Explain Banker's algorithm with an example.
35. Explain with the help of necessary diagrams the File System and Directory implementation.

(2 × 15 = 30)