C 26289   (**Pages : 2**)   Name...

                                               Reg. No...................................

FOURTH SEMESTER B.VOC. DEGREE EXAMINATION, APRIL 2017

Software Development

SDC 4IT 13—OPERATING SYSTEMS

Time : Three Hours   Maximum : 80 Marks

Section A

*Answer **all** questions.*

Each question carries 1 mark.

1. ————— is a volatile memory.

2. User program executes in ————— Mode and monitor executes in ————— mode.

3. ————— is the entry to the process table to keep track of all processes.

4. The algorithm that schedules the process according to the length of the CPU burst is —————.

5. Segmentation will have ————— fragmentation.

    (a) Internal.   (b) External.

    (c) Both internal and external.   (d) None of these.

6. 4 GB = ————— bytes.

7. To store and retrieve files on the disk, the OS provides a mechanism called —————.

8. In linked allocation contiguous blocks are grouped together as —————.

    (a) Hole.   (b) Cluster.

    (c) Swap space.   (d) None of these.

9. Which partition allocation policy performs better in the case of variable size partitions ?

10. ————— command is used to locate files and folders in Unix.

                                               (10 × 1 = 10 marks)

Section B

*Answer any **eight** questions.*

Each question carries 2 marks.

11. What are the objectives of an Operating system ?

12. List the advantages of distributed systems.

13. What is meant by multiprogramming ?

14. Define elapsed CPU time and Maximum CPU time.

15. What is response time in CPU scheduling ?

                                               Turn over

16. What are the methods for dealing dead lock problem ?

17. Explain logical address and logical address space.

18. What is external fragmentation and how it happens ?

19. What is contiguous memory allocation ?

20. What is the main function of Memory Management Unit ?

21. How can we append data to a file ?

22. What are the objectives of disc scheduler ?

(8 × 2 = 16 marks)

Section C

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

23. Compare system software and application software.

24. What are the major steps performed during booting ?

25. What are the conditions under which a deadlock situation may arise ?

26. Write notes on :

    (a) Semaphores.

    (b) Critical section.

27. Explain Belady's anomaly with suitable examples.

28. Explain counting based page replacement algorithm.

29. What are the structures used in file system implementation ?

30. Write notes on :

    (a) File protection.

    (b) File security.

31. Write a shell script that accept username and report if user logged in.

(6 × 4 = 24 marks)

Section D

Answer any **two** *questions.*
Each question carries 15 marks.

32. What is an Operating System ? Explain in detail the evolution of an OS.

33. Explain various CPU scheduling algorithms.

34. What do you mean by virtual memory ? Explain demand paging.

35. Explain the file system organization.

(2 × 15 = 30 marks)