16U632 (Pages: 2) Name: ……………..……….

Reg. No………….…………

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2019
(Regular/Supplementary/Improvement)
(CUCBCSS-UG)
CC15U BCS6 B13 - FUNDAMENTALS OF OPERATING SYSTEMS
Computer Science - Core Course
(2015 Admission onwards)

Time: Three Hours   Maximum: 80 Marks

PART A
Answer *all* questions. Each question carries 1 mark.

1. POST stands for ……………

2. Round robin scheduling is essentially the preemptive version of ……………

3. Which of the following is a single user operating system?

   a) UNIX   b) MS DOS   c) OS/2   d) None of these

4. The number of processes completed per unit time is known as ……………

5. The switching of the CPU from one process or thread to another is called ……………

6. In …………… dynamic address translation is necessary to implement paging.

7. Which module gives control of the CPU to the process selected by the short term scheduler?

   a) Interrupt   b) Dispatcher   c) Scheduler   d) None of these

8. Fence register is used for:

   a) File protection   b) CPU protection   c) Memory protection d) All of these

9. In …………… there is more than one processor within a single computer system.

10. Is it possible to protect a file from modification? Yes or No.

(10 x 1 = 10 Marks)

PART B
Answer *all* questions. Each question carries 2 marks.

11. What is an overlay? What is the use of it?

12. What do you mean by Belady's Anomaly?

13. Write a note on file accessing methods.

14. Define critical section.

15. What is resource allocation graph?

(5 x 2 = 10 Marks)

PART C

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

16. What is a semaphore? How it can be implemented?

17. Briefly explain paging.

18. Write a note on any one classical problems of synchronization.

19. Write about distributed systems with example.

20. Explain booting process.

21. Discuss on file allocation and free space management.

22. Explain process states and importance of PCB in program execution.

23. Write a note on deadlock prevention mechanisms.

(5 x 4 = 20 Marks)

PART D

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

24. Write about deadlock conditions and Banker's algorithm.

25. With a neat sketch explain segmentation.

26. Explain the functions of OS.

27. Briefly explain the features and architecture of mobile OS.

28. Explain any two CPU scheduling algorithms with example.

29. Discuss about hardware solutions for mutual exclusion problem.

30. Explain the working of demand paging in detail.

31. Consider the following page reference string 1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 7, 8, 9, 7, 8, 9, 5, 4, 4, 5, 3. How many page faults would occur for the following replacement algorithms? Assume four frames and all frames are initially empty.

    a) LRU replacement.

    b) FIFO replacement.

    c) Optimal replacement.

(5 x 8 = 40 Marks)

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