18U632 (Pages: 2) Name: ……..…….

Reg. No……..……

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2021

(CUCBCSS-UG)

(Regular/Supplementary/Improvement)

C17U BCS6 B12 - OPERATING SYSTEMS

(Computer Science - Core Course)

(2017 Admissions onwards)

Time: Three Hours Maximum: 80 Marks

PART A

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

1. The number of processes completed per unit time is known as …….
2. Which one of the following command is used for searching for a pattern in one or more files?

   a) cd b) cp c) grep d) paste
3. In a time sharing operating system, when the time slice given is completed, the process goes from running state to ……. state.
4. Round robin scheduling is essentially the preemptive version of …….
5. In UNIX, which system call creates a new process?
6. The size of the virtual memory depends on the size of …….

   a) Address bus b) Data bus c) Main memory d) None of these
7. The address generated by CPU is referred to as …….

   a) Physical address b) Logical address

   c) Physical as well as logical address d) None of these
8. Which command in Linux is used to display a line of text?
9. What is a shell?

   a) Hardware component b) Command interpreter

   c) Part in compiler d) Tool in CPU scheduling
10. Write any one classical problem of synchronization.

(10 x 1 = 10 Marks)

PART B

Answer ***all*** questions. Each question carries 3 marks.

11. Explain how multiprogramming increases the utilization of CPU.
12. What do you mean by piping in Linux?
13. What are the fields in a process control block?

14. What are the disadvantages of FCFS scheduling? What is the strategy to overcome it?
15. What are the features of Android OS?

(5 x 3 = 15 Marks)

PART C

Answer any ***five*** questions. Each question carries 5marks

16. Describe the various methods of free space management.
17. Explain the shells available in UNIX.
18. What is semaphore? How it can be implemented?
19. Distinguish between logical and physical address space.
20. How does deadlock avoidance differ from deadlock prevention? Write about deadlock avoidance algorithm in detail.
21. What is virtual memory? Discuss the benefits of virtual memory technique.
22. What do you mean by UNIX kernel?
23. Consider the following set of processes that arrive at time 0 with the length of the CPU burst time given in milliseconds.

Process	Burst Time
P1	24
P2	3
P3	3

Schedule the process using round robin scheduling algorithm

(5 x 5 = 25 Marks)

PART D

Answer any ***three*** questions. Each question carries 10 marks.

24. Consider the following page reference string 1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6. Compare the number of page faults for LRU, FIFO and Optimal page replacement algorithm. Assume four frames and all frames are initially empty.
25. Explain the architecture of mobile OS.
26. Discuss the different commands used in UNIX.
27. Briefly explain the types of operating system.
28. Give a detailed account of process synchronization.

(3 x 10 = 30 Marks)

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