1222

Code : 15CS43T

Register Number | | | | | | | | | | |

III IS/IV CS Semester Diploma Examination, Nov./Dec.-2018

OPERATING SYSTEM

Time : 3 Hours] **[Max. Marks : 100**

Instructions : (1) Answer any **six** questions from Part – **A**. Each carries **5** marks.

(2) Answer any **seven** full questions from Part – **B**. Each carries **10** marks.

PART – A

1. Discuss time sharing system.

2. Explain the different scheduling criteria.

3. Explain the contents of PCB with neat diagram.

4. Describe semaphores briefly.

5. Define deadlock. What are the necessary conditions to deadlock ?

6. Explain swapping technique with a neat diagram.

7. Discuss demand paging.

8. Discuss Copy-on-Write briefly.

9. What are the different operations that can be performed on a directory ? Explain.

PART – B

10. Explain special purpose systems.

11. Explain the different operating system operations.

12. What is Inter-Process Communication (IPC) ? Explain the two models of IPC with neat diagram.

13. Compute the average waiting time for the list of processes given in the table using FCFS & SJF CPU-scheduling algorithms with Gantt Chart. Processes Enter in the order P_1, P_2, P_3, P_4 at time 0.

Process	Burst time (MS)
P_1	06
P_2	04
P_3	07
P_4	03

14. With an example, explain resource-allocation graph with deadlock and without deadlock.

15. Explain the contiguous memory allocation with neat diagram.

16. Explain Hardware implementation of page table with a neat diagram.

17. Consider the following reference string :
1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6
How many page fault would occur for the following page replacement algorithm assuming 4 page frames ?
(i) LRU, (ii) FIFO, (iii) Optimal page replacement

18. Explain common file types with their extension and functions.

19. Illustrate single-level directory and two-level directory with a neat diagram.