1229 **Code : 15CS-43T**

Register Number | | | | | | | |

IV Semester Diploma Examination, April/May-2017

OPERATING SYSTEM

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

Note : (i) Answer any **six** full questions from Part – **A**.

(ii) Answer any **seven** full questions from Part – **B**.

PART – A

Answer any **six** full questions. Each question carries **5** marks. **6 × 5 = 30**

1. Discuss time sharing systems. **5**

2. Write a note on client server computing. **5**

3. Draw and explain state transition diagram of a process. **5**

4. With neat diagram explain the contents of PCB. **5**

5. Explain the 3 requirements for the solution to critical section problem. **5**

6. Define deadlock. Explain the necessary conditions for deadlock. **5**

7. Explain first fit, best fit and worst fit memory allocation strategies. **5**

8. Explain virtual memory. **5**

9. Briefly explain the operations that can be performed on files. **5**

PART – B

Answer any **seven** full questions. Each question carries **10** marks. $7 \times 10 = 70$

10. Explain the advantages and types of multiprocessor systems. **10**

11. Discuss the activities of operating system in connection with process management and memory management. **10**

12. Consider the following set of processes with length of CPU Burst time in milliseconds and they have arrived in the order P1, P2, P3 and P4 at time 0. **10**

Process	Burst time
P1	10
P2	1
P3	2
P4	1

(a) Draw the Gantt Chart for FCFS and SJF scheduling algorithm.
(b) Calculate the waiting time and turnaround time of each process in FCFS and SJF.
(c) Calculate average waiting and turnaround time in FCFS and SJF.

13. Explain how to detect deadlock and recover from it. **10**

14. Explain the steps for handling page replacement with a neat diagram. **10**

15. Explain hardware implementation of page table with neat diagram. **10**

16. Draw and explain segmentation with its hardware support. **10**

17. Consider the following reference string : **10**
7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1
How many page faults would occur for the following page replacement algorithm assuming 3 page frames ?
(a) FIFO
(b) Optimal page replacement
(c) LRU

18. Explain single level directory and two level directory with neat diagram. **10**

19. Define file and explain the different file attributes. **10**