Code : 15CS43T

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

IV Semester Diploma Examination, Oct./Nov.-2019

OPERATING SYSTEM

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

Instructions : (i) Answer any **six** questions from Part – **A**, each question carries **5** marks.
(ii) Answer any **seven** full questions from Part – **B**. Each question carries **10** marks.

PART – A

1. Discuss time sharing system. **5**

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

3. Explain the contents of PCB with a neat diagram. **5**

4. Explain the different scheduling criteria. **5**

5. Discuss briefly semaphore. **5**

6. Define fragmentation. Differentiate between internal and external fragmentation. **5**

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

8. Explain page replacement in brief. **5**

9. What are the different operations performed on a directory ? **5**

PART – B

10. Explain the different operating system operations. **10**

11. What is Interprocess communication ? Explain two models of IPC with neat diagram. **10**

12. Given **10**

Process	Burst Time
P_1	10
P_2	1
P_3	2
P_4	1

The processes are assumed to have arrived in order P_1, P_2, P_3, P_4 at time 0.

(a) Draw Gantt chart for FCFS and SJF scheduling algorithm.
(b) Calculate the average waiting time for FCFS and SJF algorithm.
(c) Calculate the Turn around time for FCFS and SJF algorithm.

13. How dead lock can be detected ? Explain **10**

14. (a) How can a deadlock be recovered ? Explain. **5**
(b) With diagram explain concept of swapping. **5**

15. Define segmentation. Draw and explain the hardware support implemented in segmentation. **10**

16. Given the reference string, **10**
7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1
Find the number of page faults using the following page replacement algorithms :
(i) LRU
(ii) FIFO

17. (a) Describe briefly about virtual memory. **5**
(b) Explain the different operations performed on a file. **5**

18. Explain the following : **10**
(a) Sequential access methods.
(b) Direct access methods.

19. Briefly describe the following : **5 + 5**
(a) Demand paging
(b) Resource allocation graph