Total No. of printed pages = 7

RETEST EXAMINATION – 2019

Semester : 5th (Old)

Subject Code : CO-505

OPERATING SYSTEM

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Instructions :

1. *All* questions of PART–A are compulsory.
2. Answer any *five* questions from PART–B.

PART – A

Marks – 25

1 Fill in the blanks : 1×10=10

(a) _____ is a collection of related information.

(b) Multiprogramming is also called _____.

(c) A _____ OS allows users to share.

[Turn over

(d) A _____ is a command interpreter.

(e) PCB stands for _____ _____ _____.

(f) CPU scheduling is the basis of _____ _____ _____.

(g) Data stores temporarily in _____.

(h) Spooling stands for _____.

(i) BIOS stands for _____ _____ _____ _____.

(j) In the multiprogramming environment the main memory consists of _____ number of processes.

2. Choose the correct answer : 1×5=5

(a) Which of the scheduling policy is most suitable for a time-shared operating system ?

(i) Shortest Job First

(ii) Round Robin

(iii) First Come First Serve

(iv) Elevator

(b) Moving process from main memory to disks is called

(i) Scheduling (ii) Cashing

(iii) Swapping (iv) Spooling

(c) What is the purpose of Resource allocation graph ?

(i) To represent deadlock

(ii) To detect deadlock

(iii) To avoid deadlock

(iv) To prevent deadlock

(d) Sharing is possible in which technique ?

(i) Paging

(ii) Segmentation

(iii) Both (i) and (ii)

(iv) None of the above

(e) Which command is used to create file in LINUX ?

(i) cat > filename

(ii) cat filename

(ii) copy con filename

(iv) None of the above

3. State true or false : 1×10=10

(a) Round Robin is a preemptive scheduling algorithm.

(b) A process is another name for job.

(c) Banker's algorithm is a deadlock prevention algorithm.

(d) Logical record is a collection of data treated as unit from user point of view.

(e) Collection of files is a file directory.

(f) The page size and frame size need not be equal.

(g) A thread is a Light weight process.

(h) Shared programs can cause deadlock.

(i) The function of OS is resource allocation.

(j) Critical section is not a layer of OS.

PART – B

Marks – 45

4. (a) Consider the three processes P_1, P_2, P_3 for Round Robin Scheduling which require the following CPU time 1½×3=4½

Process	CPU time
P_1	25
P_2	5
P_3	5

(i) Draw the Gantt chart.

(ii) Find the average waiting time.

(iii) Find the average turn around time.

(b) Consider the four processes P_1, P_2, P_3, P_4 for Priority Scheduling which require the following CPU time : $1\frac{1}{2}\times3=4\frac{1}{2}$

Process	CPU time	Priority
P_1	5	3
P_2	10	2
P_3	8	4
P_4	3	1

Assume that all the processes have arrived at time 0.

(i) Draw the Gantt chart.

(ii) Find the average waiting time.

(iii) Find the average turn around time.

5. (a) What is hard disk and what is its purpose ? 3

(b) Briefly explain the major functions of an operating system. 6

6. (a) What are the different states of a process ? 3

(b) Explain PCB and its contents. 3

(c) List the memory management requirements. 3

7. (a) Define the term virtual memory. 2

(b) Define deadlock and explain a deadlock prevention mechanism. 2+5=7

8. Differentiate between : $4\frac{1}{2}\times2=9$

(a) Logical address and physical address

(b) Contiguous allocation and Linked allocation.

9. (a) Draw the figure of OS structure. 3

(b) Write the differences between paging and segmentation. 6

10. What do you mean by distributed OS ? Explain briefly. 9