Total No. of printed pages = 8

Co-505/OS/5th Sem/2017/N

OPERATING SYSTEM

Full Marks – 70

Time – Three hours

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

PART – A

Marks – 25

Multiple choice / fill up the blanks / objective type questions : 1×25=25

1. (a) In LINUX everything is stored as a

(i) file

(ii) directory

(iii) executables

(iv) None of the above

[Turn over

(b) Operating system is

(i) A collection of hardware components

(ii) A collection of input output devices

(iii) A collection of software routines

(iv) All of the above

(c) A page fault occurs

(i) when the page is not in the memory

(ii) when the page is in the memory

(iii) when the process enters the blocked state

(iv) when the process is in the ready state

(d) What is a shell ?

(i) It is a hardware component

(ii) It is a command interpreter

(iii) It is a part in compiler

(iv) It is a tool in CPU scheduling

(e) The number of processes completed per unit time is known as ?

(i) Output

(ii) Throughput

(iii) Efficiency

(iv) Capacity

(f) Which scheduling policy is best suited for time-sharing operating systems ?

(i) Shortest job first

(ii) Round robin

(iii) First come first serve

(iv) Elevator

(g) In which scheduling policies, context switching never takes place ?

(i) FCFS

(ii) Round robin

(iii) Shortest job first

(iv) Pre-empitive

(h) Four necessary conditions for deadlock are non pre-emption, circular wait, hold and wait and

(i) mutual exclusion

(ii) race condition

(iii) buffer overflow

(iv) None of the above

(i) Banker's algorithm deals with

(i) deadlock prevention

(ii) deadlock avoidance

(iii) deadlock recovery

(iv) mutual exclusion

(j) Which command is / are used to remove directory in Linux ?

(i) rmdir

(ii) rm-r

(iii) both (i) and (ii)

(iv) None of the above

(k) A process is a program in ———.

(l) Multiprogramming means number of jobs can be executed by the ——— simultaneously.

(m) A process is a ——— (dynamic / static) object.

(n) Each light weight process is said to be a ———.

(o) CPU scheduling is the basis of ——— (real time operating system / multiprogramming operating system).

(p) In CPU scheduling, the CPU switches between ———.

(q) The interval from time of submission to the time of completion is the ——— time.

(r) The amount of time that a job spends waiting in the ready queue is called ——— time.

(s) A small unit of time is called ——— in Round Robin.

(t) Swapping is a method to improve the ——— utilization.

(u) A ——— can be defined as a logical grouping of instructions such as a subroutine, array or data area.

(v) The ——— shell is the oldest of all shells.

(w) The ——— is the heart of any operating system.

(x) CPU performance measured through ———.

(y) The structure of Operating system consists of ——— layers.

PART – B

Marks – 45

Answer any *three* questions.

2. (a) What are the characteristics of a distributed operating system ? 9

(b) Explain the terms sector, cluster and cylinder related to hard disk. 6

3. (a) Explain the Shortest Job First scheduling algorithm with an example. 6

(b) In a FCFS scheduling algorithm, consider the following four processes P1, P2, P3 and P4 in the same order of arrival.

Process	CPU Burst time in milliseconds
P1	5
P2	10
P3	8
P4	3

The set of processes that arrive at time 0.

(i) Draw the Gantt chart. 3×3=9

(ii) Find average waiting time.

(iii) Find average turn around time.

4. (a) Write down the difference between process and thread. 6

(b) Explain following three different types of file accessing method 3×3=9

(i) Sequential access

(ii) Direct access

(iii) Indexed sequential access.

5. (a) Explain following methods of file allocation.

(i) Contiguous allocation

(ii) Linked allocation 3×2=6

(b) What is deadlock ? Explain one method to prevent deadlock. 3+6=9

6. Write short notes on any *three* : 3×5=15

(a) Spooling

(b) Segmentation

(c) Demand Paging

(d) MS-DOS Operating System.