

VPM's B. N. Bandodkar College of Science, Thane

S. Y. B. Sc. Semester IV Examination, March 2017

Course Code: USCS401

Duration: 02.30 Hrs

Total Marks: 75

Q.1

Answer the following:

- a. Draw and explain the structure of operating system? 08

OR

- a. What is system call? Explain all the types of system calls.. 08

- b. What are the various access permissions and types of users for a file in Linux? How chmod command is used to change access permissions of a file? 07

OR

- b. Write a sequence of Linux commands for:- create a file myfile, enter some information about Linux in this file, save this content, display the default access permissions for this file. Remove write permissions from all users. 07

- c. What is thread? List the advantages of multithreading. 05

OR

- c. Write a short note on Process Table 05

Q.2

Answer the following:

- a. Calculate turn around time, waiting time, average turn around time and average waiting time for the following processes by using First come first served algorithm. Also draw the gantt chart for these processes. 08

Process	Burst Time	Arrival Time
P0	4	0
P1	6	0
P2	2	0
P3	5	0

OR

- a. Calculate turn around time, waiting time, average turn around time and average waiting time for the following processes by using Round Robin algorithm with time Quantum=4. Also draw the gantt chart for these processes. 08

Process	Burst Time	Arrival Time
P0	4	0
P1	6	0
P2	7	0
P3	5	0

- b. Explain dining philosopher's problem. 07

OR

- b. List all the arithmetic operators used in shell script. Write a shell script to perform all these arithmetic operations on any two variables. 07

- c. What is thread? Differentiate between user level and kernel level threads. 05

OR

- c. Define process. Differentiate between process and thread. 05

P.T.O.

Q.3 Answer the following:

- a. What is file? Explain in detail implementation of file system. 08

OR

- a. What is directory? Write all the system calls related to directory operations. What are the different structures of directories? 08
- b. What is absolute pathname and relative pathname? Describe by using suitable examples of Linux commands. 07

OR

- b. What is file extension? What is its use. List various file extensions with their types. 07
- c. What is virtual memory? Write its advantages and disadvantages. 05

OR

- c. How does operating system handles memory management? 05

Q.4 Answer any THREE of the following:

15

- a. Explain contiguous and non-contiguous memory allocation.
- b. What is address space? Explain base and limit registers.
- c. Write a note on segmentation.
- d. Describe scheduling in real time operating systems.
- e. What is deadlock? Write Coffman's conditions for deadlock.
- f. Explain banker's algorithm with example.

~*~*~*~*~*~