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- Notes :
1. All questions are compulsory & carry equal marks.
 2. Draw neat and clean diagram wherever necessary.
 3. Avoid vague answers and write answers relevant and specific to questions only.
 4. Assume the data when & wherever necessary.

1. Either

- a) Write a note on Function and Role of Operating system. **5**
- b) Give details about Time Sharing Operating System. **5**

OR

- c) Describe the concepts of batch operating system. **5**
- d) Discuss on CPU protection. **5**

2. Either

- a) What is process? List the activities of an operating system with respect to process management. **5**
- b) Discuss on command Interpreter system. **5**

OR

- c) Explain main memory management in brief. **5**
- d) Demonstrate the Networking as an Operating System Component. **5**

3. Either

- a) Write a note on structure of LINUX Operating system. **5**
- b) Discuss on Bourne Shell. **5**

OR

- c) Demonstrate working with the text editing with reference to Vi editor. **5**
- d) What is the meaning of following LINUX commands. **5**
 - i) `$ ls -l`
 - ii) `$ mkdir manju yenko tem`
 - iii) `$ rm dir kamal kisan indu`
 - iv) `$ mv prachi rushi/ratna/mala`
 - v) `$ rm keshao.txt kavita.tmp rajshri.bat.`

4. Either
- a) Explain in detail about grep command with example. 5
 - b) Describe the purpose of ps and kill in brief. 5

OR

- c) Give details about chmod command with example. 5
 - d) Demonstrate the shell script to display the contains of anil.edu and hema.bat. 5
5. All questions are compulsory.
- a) List the advantage of Multi Programmed Operating system. 2½
 - b) Write a note on information maintenance. 2½
 - c) Give the meaning of
\$ cat -n kiara.txt 2½
 - d) Demonstrate creation of variable in shell script with suitable example. 2½
