

Code No: 824AB

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA IV Semester Examinations, August - 2017****LINUX PROGRAMMING****Time: 3hrs****Max.Marks:75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A****5 × 5 Marks = 25**

- 1.a) How are diff, comm and cmp utilities different from each other? Explain. [5]
- b) Define the boot block, super block, inode block and data block of the file system. [5]
- c) What is a zombie process and explain how it may manifest itself? [5]
- d) Explain popen( ) and pclose( ) functions with sample prototypes. [5]
- e) Differentiate between TCP and UDP. [5]

**PART - B****5 × 10 Marks = 50**

- 2.a) What are the features of Linux Operating system?
  - b) Explain the usage of 'chmod' command with clear syntax and example. [5+5]
- OR**
- 3.a) Write down the responsibilities of BASH shell.
  - b) How to debug a shell script? Explain various options available in BASH shell for debugging a script. [5+5]
4. Give the directory structure of Linux file system. Explain its entries. [10]
- OR**
5. What are the three kernel data structures for open files? Explain how these data structures are shared by two independent processes with the same file open with a neat diagram. [10]
  6. Explain in how many ways and when a process terminate under normal and abnormal conditions. [10]
- OR**
7. With an illustrative example explain signal( ) and abort( ) functions. [10]
  8. Explain how to implement client - server communication using Message Queues. [10]
- OR**
9. Describe the operations of semop( ) with a sample C program. [10]
  10. Explain how TCP connections are established and terminated. [10]
- OR**
11. Write the syntax of the following socket system calls and explain:  
a) connect( )   b)listen( )   c) shutdown( ) [10]

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