

Code No: 824AB

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA IV Semester Examinations, January - 2018****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) Describe the special parameters used by shell. [5]
- b) What are hard links? Give their advantages and disadvantages. [5]
- c) Discuss the role of kill and raise functions in signal generation. [5]
- d) Write a program to implement the creation of a pipe. [5]
- e) What system calls are used to send and receive the data through sockets? [5]

**PART - B****5 × 10 Marks = 50**

2. What is sed? Explain addressing in sed with suitable examples. [10]

**OR**

- 3.a) What is the exit status of a command and where is it stored?
- b) Write a shell script to display the current users of the system who have logged in for more than half an hour. [5+5]

- 4.a) What is an i-node? Explain the process of conversion of file path name to an i-node.
- b) Explain fseek, fopen, fclose system call in detail. [5+5]

**OR**

5. What is a directory? List and explain various directory maintenance systems calls that are present in unix. [10]

- 6.a) What is a zombie process? Give its significance.
- b) Write a program to implement the sleep function. [5+5]

**OR**

7. Explain the role of the following system calls with respect to process:  
a) fork()      b) Wait()      c) Exec()      d) waitpid      e) vfork [10]

8. How to achieve the inter process communication by using FIFOs? Explain with some code snippets. [10]

**OR**

9. What is Semaphore? Explain how you would use semaphore system calls to solve critical section problems. [10]

- 10.a) Describe the role of port numbers with respect to sockets.
- b) Explain Byte-Ordering, address format and address lookup in Sockets. [5+5]

**OR**

- 11.a) What is a socket? Explain the socket system call along with the parameters present in it.
- b) Which system call is used to create shared memory segment and explain it. [5+5]

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