

Code No: 5405AN

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. Tech II Semester Examinations, December – 2018/January - 2019

NETWORK PROGRAMMING

(Computer Science)

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) Write a bash script that takes a file name as a command-line argument and reports whether it is a directory file, an ordinary file or something else. [5]
- b) Give the syntax of fcntl() function. What are the uses of fcntl() function. [5]
- c) Explain with syntax the functions of semget() function. [5]
- d) Draw a diagram that shows the calling sequence of socket system calls for connection-oriented communication between a Client and a Server. [5]
- e) Explain with syntax the uses of any two Server Socket class constructors in Java. [5]

PART - B**5 × 10 Marks = 50**

- 2.a) What are the responsibilities of a shell?
- b) Write a bash script to determine if the given number is a prime number or not. A prime number is a number which is divisible by itself and 1. [5+5]

OR

- 3.a) Explain the following commands with suitable examples:
 - i) ftp
 - ii) tar
- b) Write a bash script that deletes all lines containing the word 'NETWORK' in the files supplied as command-line arguments to it. [5+5]
- 4.a) When a child process is created, what resources are inherited from its parent? What attributes are different between the parent and the child process?
- b) Explain with syntax the uses of open () system call. [5+5]

OR

- 5.a) Write a C program that lists from the current directory all ordinary filenames whose size exceeds 1000 bytes.
- b) What are the differences between fork() and vfork() functions? [5+5]

- 6.a) Explain the different ways in which a process can react to signals in Unix with examples.
- b) Explain with syntax the purpose of `msgrcv()` function. [5+5]

OR

7. Write C programs (`send.c` and `recv.c`) that illustrate communication between two unrelated processes using a named pipe. One process writes a message to named pipe. Another process reads the same message from the named pipe and displays it to standard output device. [10]

8. Explain in detail how the IPC functionality is provided by shared memory. [10]

OR

9. Explain with syntax the purpose of the following socket system calls: [10]
a) `socket()` b) `bind()` c) `sendto()` d) `recvfrom()`

10. Write a Server program in Java that uses connection-oriented TCP socket to perform the following: The Server receives the message sent by the client, reverses it and sends it back to the client. The Server listens to port 5500. [10]

OR

- 11.a) Discuss with syntax the uses of any two `DatagramSocket` class constructors in Java.
- b) What are the functions of stub and skeleton in RMI applications? [5+5]

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