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INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

B.Tech VI Semester End Examinations (Regular) - May, 2019

Regulation: IARE – R16

LINUX INTERNALS

Time: 3 Hours

(IT)

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

- (a) Explain the control structures of shell programming with suitable examples. [7M]

(b) Write a shell script to check whether a given number is a prime number or not. [7M]
- (a) Discuss elaborately about grep command with suitable examples. [7M]

(b) Write a shell script to generate Fibonacci series. [7M]

UNIT – II

- (a) Describe the file system structure of Linux operating system with neat diagram. [7M]

(b) Write a C program for open a file, read and display the content of opened file, and unlink the same file. [7M]
- (a) Differentiate the following functions stat(), fstat(), and lstat() with syntax. [7M]

(b) Write a C program that takes one or more file or directory names as input and reports the following information on the file:

 - File type
 - Number of links
 - Read, write and execute permissions
 - Time of last access

[7M]

UNIT – III

- (a) What is process and what is the function to create new process ? Differentiate fork() and vfork() with example? [7M]

(b) Define Orphan and Zombie process. Write a C program to create Zombie process. [7M]
- (a) What is a signal? Why we need them? Explain signal handler function in detail. [7M]

(b) Write a C program to catch signal SIGINT and display message “hello you are interrupted” after pressing ctrl + c, catch signal using signal handler function. [7M]

UNIT – IV

7. (a) Differentiate pipe and named pipe concepts in inter process Communication. [7M]
(b) Write a C program to create a pipe between a parent and its child and to send data through the pipe. [7M]
8. (a) What is message queue. Describe message queue API with syntax and example? [7M]
(b) Write a C program that receives 3 messages from the sender using message queues system calls and displays messages to output stream based on priority. [7M]

UNIT – V

9. (a) Explain the following functions [7M]
i) shmget()
ii) shmctl()
iii) shmat()
(b) Write a C program to achieve inter process communication through shared memory. [7M]
10. (a) Illustrate TCP socket connection establishment with a neat diagram? [7M]
(b) Write a C program to implement echo client server programme using UDP Socket elementary functions. [7M]

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