

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

Course Code: IT363

Course Name: UNIX SHELL PROGRAMMING

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks

Marks

- 1 a) With the help of a diagram, explain the UNIX architecture. (7)
b) With the help of diagrams, explain the Inode structure of a directory and a file in UNIX file system. What is the largest file size possible. (8)
- 2 a) What is the difference between **ls** and **less** commands? Write an example for each. How can it be connected using a pipe? (5)
b) What is the difference between hard and soft links? (5)
c) With the help of an example, write down the usage of sticky bit. (5)
- 3 a) Explain the different modes of operations used in **vi** editor. Write down the commands used in each mode. (7)
b) Explain the different types of permissions that can be set for a file in Unix. Write down the command used to set all the permissions to other users. (4)
c) With the help of examples, write down the usage of **touch**, **cat**, **ps** and **chmod** commands. (4)

PART B

Answer any two full questions, each carries 15 marks

- 4 a) What are the functions of shell in Unix? Name any 4 types of shells. (5)
b) Describe the working of the following commands. Assume '\$' as the default shell prompt (10)
i) `$ who | wc -l >abc`
ii) `$ls -lt | head -5`
iii) `$psax | wc -l`
iv) `$whoami | wc -c`
v) `$ls [aeiou]* | wc -l`
- 5 a) With the help of examples, explain the usage of any ten common environment variables available in Unix system. (10)
b) What is the difference between foreground process and background process? Explain with an example. (5)
- 6 a) With the help of examples, explain the usage of **ftp**, **rsh**, **finger**, **telnet** and **msg** commands. (10)
b) What do you mean by signals? What is the command used to list down all the signals supported by your system? Write down any 4 signals available in Unix system. (5)

PART C

Answer any two full questions, each carries 20 marks

- 7 a) What do you mean by a regular expression? With the help of an example, explain the structure of a regular expression. (7)
- b) Write down the commands for the following questions using regular expression: (8)
- i) List all the directories in a folder excluding files.
 - ii) Find all the lines which are commented using '#'
 - iii) Find all the files which contains a number in the file name between **a** and **x**
 - iv) List all the files in the current directory which ends with '**sh**'
- c) Write a program in **awk** to print the squares of numbers between 1 to 10. (5)
- 8 a) With the help of an example, explain the syntax of conditional statement in shell script. Write down any 4 test operators that can be used with conditional statement. (8)
- b) Write a shell script to find the factorial of a given number using a subroutine. (7)
- c) What is the difference between sleep and wait commands in shell? Explain with examples. (5)
- 9 a) With the help of examples, explain the different comparison operators available in **awk**. Write a shell script to print first 10 odd numbers. (8)
- b) Write a menu-driven script to perform all the basic arithmetic operations (+, -, /, and *). (7)
- c) Write a shell script to compile all the C programs in the current directory into binaries. (5)

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