Code No: R1631052 **R16** SET - 1

III B. Tech I Semester Regular/Supplementary Examinations, October/November - 2019

UNIX PROGRAMMING

(Common to Computer Science and Engineering, Information Technology)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A (14 Marks)

1.	a)	Explain the difference between utilities and applications.	[2M]
	b)	Which command is used to change the owner of a file in UNIX? Give its syntax.	[2M]
	c)	What is a Shell in UNIX operating system?	[2M]
	d)	How do you grep a case insensitive?	[3M]
	e)	What does the "export" command do in Shell programming?	[3M]
	f)	Write about "trap" command in UNIX.	[2M]

PART –B (56 Marks)

2.	a)	Describe the features of UNIX that made it so popular.	[6M]
	b)	Explain the following UNIX commands: i) uname ii) ls iii) more iv) script.	[8M]
3.	a)	Discuss about file attributes and permissions in UNIX.	[7M]
	b)	Explain in detail the syntax of ***chgrp*** command.	[7M]
4.	a)	Discuss in detail about Shell Input/Output redirections.	[7M]
	b)	Write a script to print the first 10 elements of Fibonacci series.	[7M]
5.	a)	Explain the format of ***grep*** command and Compare the three utilities of the ***grep*** family.	[7M]
	b)	Illustrate the format for user defined functions in awk script. Write a function to find the smallest of 10 integers.	[7M]
6.	a)	How to create and use array in Shell script? Explain.	[7M]
	b)	What is the application of ***eval*** command in C shell and also explain the execution of ***eval*** command with suitable example.	[7M]
7.	a)	What is a process in UNIX? Distinguish between a foreground process and a background process. List out various command in UNIX to deal with process.	[8M]
	b)	Explain the following UNIX commands: i) stty ii) kill.	[6M]

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Code No: R1631052 **R16** SET - 2

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Time: 3 hours Max. Marks: 70

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2. Answer **ALL** the question in **Part-A**
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PART –A (14 Marks)

1. a) Explain the following UNIX commands: i) cat, ii) rmdir. [2M]
   b) Where are inodes stored? [2M]
   c) What are the functions of Shell in UNIX? [3M]
   d) Differentiate between grep and awk. [3M]
   e) What are wildcards? Give examples of their usage. [2M]
   f) What are Zombie processes in UNIX? [2M]

PART –B (56 Marks)

2. a) What is UNIX? What are the various versions of UNIX? Explain the prominent features of UNIX. [6M]
   b) Explain the following UNIX commands with examples: [8M]
   i) mkdir ii) rm iii) tar iv) who.

3. a) What is a root directory in UNIX? How do you find root directory in UNIX? Can we know the inode number of root directory in UNIX file system? [7M]
   b) Explain in detail the syntax of ***chmod*** command. [7M]

4. a) Explain the two different duties of a Shell. How can you create a sub shell? How can you move to the parent shell after creating a sub shell? [7M]
   b) How will you pass and access arguments to a shell script in UNIX? Explain with an example. [7M]

5. a) What are filters in UNIX? Give their significance with an example. [7M]
   b) With a neat diagram, describe an ***awk*** utility's view of a file and also explain the file buffers and record buffers of ***awk***. [7M]

6. a) What would be printed from each of the following script segment? Explain why. [7M]
   (i) for i in $(date)
   (ii) do
   print$i
   done | head -3.
   b) How do we know the exit status of a command in C shell? Explain. [7M]

7. a) With a neat sketch, explain the memory architecture of a process in UNIX. [7M]
   b) Explain the steps for creating a new process using fork() system call and also discuss the address space of the parent and child processes. [7M]

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Code No: R1631052 **R16** SET - 3

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UNIX PROGRAMMING

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Time: 3 hours Max. Marks: 70

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2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A (14 Marks)

1.	a)	Explain the following UNIX commands: i) more, ii) script.	[2M]
	b)	What is the difference between chmod and chown commands in UNIX?	[2M]
	c)	What is the difference between a Shell and a Terminal in UNIX?	[2M]
	d)	Write about grep family.	[3M]
	e)	Where are Shell variables stored?	[3M]
	f)	How do you end a process in Unix?	[2M]

PART –B (56 Marks)

2.	a)	With a neat sketch, explain the architecture of UNIX operating system.	[6M]
	b)	Explain the following UNIX commands with examples: i) printf ii) who iii) mkdir iv) wc.	[8M]
3.	a)	Explain the implementation details of UNIX file system.	[7M]
	b)	Explain the commands that are available in UNIX file system to change the permissions of a file.	[7M]
4.	a)	What are positional parameters in a Shell script? How to validate input parameters? Explain with an example.	[7M]
	b)	Explain the use of Shell meta characters with an example.	[7M]
5.		Define the ***sed*** utility? Give the format of the ***sed*** and Explain the operation of the ***sed*** utility with suitable diagrams.	[14M]
6.	a)	Explain the following statements in shell script: i) continue ii) while iii) if-else iv) case-esac.	[7M]
	b)	Write a shell script to back up a list of files.	[7M]
7.	a)	What are parent and child processes in UNIX operating system? How many child processes can be created for a process at a time? What resources are shared between parent process and child process?	[7M]
	b)	Explain the following UNIX commands: i) Trap ii) stty.	[7M]

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Code No: R1631052 **R16** SET - 4

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Time: 3 hours Max. Marks: 70

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2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A (14 Marks)

1. a) Differentiate between a system call, a library function and a Unix command. [3M]
   b) What does chmod 744 mean in UNIX? [2M]
   c) What is the difference between Shell and Kernel? [2M]
   d) Can the awk command accept a regular expression? Give explanation. [3M]
   e) What are positional parameters? [2M]
   f) What are background processes in UNIX? [2M]

PART –B (56 Marks)

2. a) Explain various components of UNIX operating system. [6M]
   b) Explain the following UNIX commands [8M]
   i) printf ii) umount iii) rmdir iv) wc.

3. a) Explain about inode data structure in UNIX file system. [7M]
   b) Explain in detail the syntax of ***chown*** command in UNIX. [7M]

4. a) What is a Shell script? Why is it important? What are the advantages of using Shell scripts? List out different types of commonly used Shells. [7M]
   b) What is Redirection? Explain various commands used for redirection. [7M]

5. Illustrate the working of the ***grep*** command and its variants with a suitable example. [14M]

6. a) Discuss various options available to control the execution of commands in Shell scripting. [7M]
   b) Explain the following commands: i) expr ii) sleep iii) script. [7M]

7. a) Explain the commands that are available in UNIX for synchronizing the parent and child processes. [7M]
   b) Differentiate between Internal and External commands of UNIX. [7M]

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