

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT- 3	Sheet No. 1/3
Branch	COMPUTER SCIENCE AND ENGINEERING			Semester	FOURTH
Course Code		Course Name	LINUX AND SHELL PROGRAMMING		
Course Outcome 1	Understand basics of Unix Operating System and File System.			<u>(Hrs)</u>	<u>(Marks)</u>
Learning Outcome 1	Discuss the history and development of Linux Operating System.			6	10
Contents	Unix Operating System, Understanding Open Source, Linux Origins, Distributions, Linux Principles, linux vs windows.				
Method of Assessment	END SEM THEORY (EXTERNAL)				
Learning Outcome 2	Understand Linux usages and basics.			6	10
Contents	Logging in to a Linux System, Switching between virtual consoles and the graphical environment, Changing your password, The root user, Changing identities, Editing text files.Choose and download a Linux distro, Linux installation process, install more software,Use Linux on a virtual machine.				
Method of Assessment	PROGRESSIVE TEST-I (INTERNAL)				

Learning Outcome 3	Explain Linux File System.	8	10
Contents	Linux File Hierarchy Concepts, Some Important Directories, Current Working Directory, File and Directory Names, Absolute and Relative Pathnames, command related to files and directory Changing Directories, Listing Directory Contents, Copying, Moving, Renaming, Creating and Removing Files & Directories, Determining File Content. Partitions and File system, I-nodes, Directories, Hard Links, Symbolic (or soft) Links, The Seven Fundamental File types, Checking Free Space, mounting & unmounting File system , working with etc/fstabe, Archiving Files, Compressing, Creating, Listing and Extracting File, Other Archiving Tools.		
Method of Assessment	END SEM THEORY (EXTERNAL)		
Course Outcome 2	Understanding the basic set of commands and utilities in Linux systems.		
Learning Outcome 4	Use basic commands of files and directories.	8	15
Contents	Running Commands, Some Simple commands list basic commands, Getting Help, The whatis command, The – help Option, Reading Usage Summaries. Files and Directories echo, type, bc, cal, date, cat, cd, chgrp, chmod, cp, file, find, grep, egrep, fgrep, head, just, lpq, lpr , lprm, cancel, ls, ls-l, mkdir, more, page, mv, pwd, passwd, rm, rmdir, tail, touch.		
Method of Assessment	PRACTICAL (EXTERNAL)		

Learning Outcome 5	Use Linux commands for file editor, compression and text processing.	8	10
Contents	<p>File Editors Editors are used to create and amend files. Emacs, ex, edit, gedit, nedit, xemacs, emacs, dtpad, pico, vi,</p> <p>Compressed files Files may be compressed to save space. Compressed files can be created and examined. Compress, uncompress, zcat, zcmp, zdiff, zmore, tar, zip, unzip, gzip, gunzip, bzip2, bunzip2.</p> <p>Text Processing vi: Opening, Modifying, saving and exiting vi text editor, mode of vi. Viewing file contents, sorting text, Eliminating Duplicate lines, Comparing files, Compressing the file, Introduction to gedit.</p>		
Method Of Assessment	END SEM THEORY (EXTERNAL)		
Learning Outcome 6	Apply basic commands to manipulate data.	6	10
Contents	The contents of files can be compared and altered with the following commands. Awk, cmp, comm, cut, diff, expand, unexpand, gawk, Join, look, paste, sed, sort, split, tr, uniq, wc.		
Method of Assessment	PRACTICAL (INTERNAL)		
Learning Outcome 7	Apply standard input/output and pipes in file.	5	10

Contents	Standard I/O and Pipes Standard Input and Output, Redirecting Output to a File, Redirecting STDOUT to a Program(Piping), Combining Output and Errors, Redirecting to Multiple Targets (tee), Redirecting STDIN from a file.		
Method of Assessment	END SEM THEORY (EXTERNAL)		
Course Outcome 3	Write shell programming and investigate & manage processes.		
Learning Outcome 8	Use and configure the Bash Shell.	5	10
Contents	Introduction of Bash shell, Bash Features, Command Line, Command Line Expansion, and Editing, gnome-terminal.		
Method of Assessment	PROGRESSIVE TEST-II (INTERNAL)		
Learning Outcome 9	Write shell programming using different programming aspects.	8	15
Contents	Scripting Basics, Creating Shell Scripts, Handling Input/ Output, Control Structures, Conditional Execution, File and string Tests, continue and break, Using positional parameters, Scripting at the command line, Shell Script debugging.		
Method of Assessment	PRACTICAL(EXTERNAL)		
Learning Outcome 10	Explain Process management.	6	10

Contents	Investigating and Managing Process Process, Listing Processes, Finding Processes, Signals Sending, Signals to Processes, Scheduling Priority, Altering Scheduling Priority, Interactive Process management tools, Job Control, Scheduling a Process to execute later, Crontab File format, Different run levels.		
Method of Assessment	END SEM THEORY (EXTERNAL)		
Course Outcome 4	Explain the role of system administration and network services in Linux.		
Learning Outcome 11	Define the role of system administration.	6	10
Contents	Common Administrative tasks, identifying administrative files – configuration and log files, Role of system administrator, Managing user accounts –adding & deleting users, changing permissions and ownerships, Creating and managing groups, modifying group attributes, Temporary disable user's accounts, creating and mounting file system, checking and monitoring system performance, file security, password and Permissions, becoming super user using su.		
Method of Assessment	END SEM THEORY (EXTERNAL)		
Learning Outcome 12	Understand the way of getting system information.	6	10
Contents	Host name, disk partitions & sizes, users, kernel. Backup and restore files, Utility in GUI, reconfiguration hardware with kudzu.		

Method of Assessment	TERM WORK- ASSIGNMENT (INTERNAL)		
Learning Outcome 13	Explain network services.	6	10
Contents	NETWORKING SERVICES ON LINUX: Server –side setup, configuration, and basic administration of common networking services: Sambha, DNS, NIS, Apache, SMB, DHCP, Sendmail, FTP Other common services: tftp, pppd, proxy		
Method of Assessment	END SEM THEORY (EXTERNAL)		
Learning Outcome 14	Apply Linux networking concept to setup a small network.	6	10
Contents	Networking Services: Sambha, Apache, DHCP, FTP. Setup a small network in your lab and connect to that network Internet Protocol Service. These commands are used to send and receive files from Campus UNIX hosts and from other hosts and the Internet around the world. ifconfig, ping, traceroute, netstat, hostname, nslookup, route, host, arp, iwconfig, etc.		
Method of Assessment	PRACTICAL (INTERNAL)		

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	O	4	4	O	4	1	1	
COURSE NAME		LINUX AND SHELL PROGRAMMING											
CO-1 Description		Understand basics of Unix Operating System and File System.											
LO-1 Description		Discuss the history and development of Linux Operating System.											
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1.	Unix Operating System, Understanding Open Source, Linux Origins, Distributions, Linux Principles, linux vs windows.	Traditional Lecture method + Handout	Teacher will explain the contents and provide handouts to students.	6	-	Handout							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
	Paper pen test(End Semester Exam)	Students will be asked to explain	10	Test Paper			External						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME				Branch Code			Course Code			CO Code	LO Code	Format No. 4
						C	O	4	4	O	4	1	2	
COURSE NAME		LINUX AND SHELL PROGRAMMING												
CO-1 Description		Understand basics of Unix Operating System and File System.												
LO-2 Description		Understand Linux usages and basics.												
SCHEME OF STUDY														
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks							
	Logging in to a Linux System, Switching between virtual consoles and the graphical environment, Changing your password, The root user, Changing identities, Editing text files.Choose and download a Linux distro, Linux installation process, install more software,Use Linux on a virtual machine.	Traditional Lecture method + Handout	Teacher will explain the contents and provide handouts to students.	6	-	Handout								
SCHEME OF ASSESSMENT														
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required		External / Internal								
	Paper pen test (Progressive test -1)	A Student will be asked to	10	Test Paper		Internal								

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

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RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		<i>C</i>	<i>0</i>	<i>4</i>	<i>4</i>	<i>0</i>	<i>4</i>	<i>1</i>	<i>3</i>	
COURSE NAME	LINUX AND SHELL PROGRAMMING									

CO-1 Description	Understand basics of Unix Operating System and File System.
LO-3 Description	Explain Linux File System.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
	Linux File Hierarchy Concepts, Some Important Directories, Current Working Directory, File and Directory Names, Absolute and Relative Pathnames, command related to files and directory Changing Directories, Listing	Traditional Lecture method	Teacher will explain the contents.	-		Handout	

	Directory Contents, Copying, Moving, Renaming, Creating and Removing Files & Directories, Determining File Content. Partitions and File system, l-nodes, Directories, Hard Links, Symbolic (or soft) Links, The Seven Fundamental File types, Checking Free Space, mounting & unmounting File system , working with etc/fstabe, Archiving Files, Compressing, Creating, Listing and Extracting File, Other Archiving Tools.						
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SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Paper pen test(End Semester Exam)	Students will be asked to	10	Test Paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

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RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		<i>C</i>	<i>0</i>	<i>4</i>	<i>4</i>	<i>0</i>	<i>4</i>	<i>2</i>	<i>4</i>	
COURSE NAME	LINUX AND SHELL PROGRAMMING									

CO-2 Description	Understanding the basic set of commands and utilities in Linux systems.
LO-4 Description	Use basic commands of files and directories.

SCHEME OF STUDY							
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
	Running Commands, Some Simple commands list basic commands, Getting Help, The whatis command, The – help Option, Reading Usage Summaries.	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.		8	Lab Manual	

Files and Directories echo, type, bc, cal, date, cat, cd, chgrp, chmod, cp, file, find, grep, egrep, fgrep, head, just, lpq, lpr , lprm, cancel, ls, ls-l, mkdir, more, page, mv, pwd, passwd, rm, rmdir, tail, touch.						
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SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Practical	Student will be asked to	15		External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

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RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		C	0	4	4	0	4	2	5	
COURSE NAME	LINUX AND SHELL PROGRAMMING									

CO-2 Description	Understanding the basic set of commands and utilities in Linux systems.
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LO-5 Description	Use Linux commands for file editor, compression and text processing.
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SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
	<p>File Editors Editors are used to create and amend files. Emacs, ex, edit, gedit, nedit, xemacs, emacs, dtpad, pico, vi,</p> <p>Compressed files Files may be compressed to save space. Compressed files can be created and examined. Compress, uncompress, zcat, zcmp, zdiff, zmore, tar, zip, unzip, gzip, gunzip, bzip2, bunzip2.</p> <p>Text Processing vi: Opening, Modifying, saving and exiting vi text editor, mode of vi. Viewing file contents, sorting text, Eliminating Duplicate lines, Comparing files, Compressing the file, Introduction to gedit.</p>	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	8		Handout	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Paper pen test(End Semester Exam)	Students will be asked to	10	Test Paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		C	0	4	4	0	4	2	6	
COURSE NAME	LINUX AND SHELL PROGRAMMING									

CO-2 Description	Understanding the basic set of commands and utilities in Linux systems.
LO-6 Description	Apply basic commands to manipulate data.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
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	The contents of files can be compared and altered with the following commands. Awk, cmp, comm, cut, diff, expand, unexpand, gawk, Join, look, paste, sed, sort, split, tr, uniq, wc.	Traditional Lecture method	Teacher will explain the contents and provide Lab Manual to students.	-	6	Lab manual	
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SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Practical	Student will be asked to	10	Lab Manual	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Experiment-

CO-2 Description	Understanding the basic set of commands and utilities in Linux systems.
LO-7 Description	Apply standard input/output and pipes in file.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
	Standard I/O and Pipes: Standard Input and Output, Redirecting Output to a File, Redirecting STDOUT to a Program(Piping), Combining Output and Errors, Redirecting to Multiple Targets (tee), Redirecting STDIN from a file.	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	5	-	Handout	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal

	Paper pen test(End Semester Exam)	Student will be asked to	10	Test paper	External
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ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

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CO-3 Description	Write shell programming and investigate & manage processes.
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LO-8 Description	Use and configure the Bash Shell.
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SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
	Introduction of Bash shell, Bash Features, Command Line, Command Line Expansion, and Editing, gnome-terminal.	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	5	-	Hand out	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
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	Paper pen Test (Progressive-II)	Students will be asked to	10	Test paper	Internal
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)					

CO-3 Description	Write shell programming and investigate & manage processes.
LO-9 Description	Write shell programming using different programming aspects.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
	Scripting Basics, Creating Shell Scripts, Handling Input/ Output, Control Structures, Conditional Execution, File and string Tests, continue and break, Using positional parameters, Scripting at the command line, Shell Script debugging.	Traditional Lecture method + Handout	Teacher will explain the contents.		8	Lab Manual	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Practical	Student will be asked	15		External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

CO-3 Description	Write shell programming and investigate & manage processes.
LO-10 Description	Explain Process management.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
	Investigating and Managing Process Process, Listing Processes, Finding Processes, Signals Sending, Signals to Processes, Scheduling Priority, Altering Scheduling Priority, Interactive Process	Traditional Lecture method	Teacher will explain the contents and provide handout to students.	6		Handout	

management tools, Job Control, Scheduling a Process to execute later, Crontab File format. Different run levels						
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SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Paper pen test(End Semester Exam)	Students will be asked to	10	Test Paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

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CO-4 Description	Explain the role of system administration and network services in Linux.						
LO-11 Description	Define the role of system administration.						
SCHEME OF STUDY							
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Common Administrative tasks, identifying administrative files – configuration and log files, Role of system administrator, Managing user accounts –adding & deleting users, changing permissions and ownerships, Creating and managing groups, modifying group attributes, Temporary disable user's accounts, creating and mounting file system, checking and monitoring system performance, file security, password and Permissions, becoming super user using su.	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6	-	Handout	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Paper pen test (End semester Exam)		10	Test paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

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COURSE NAME

LINUX AND SHELL PROGRAMMING

CO-4 Description

Explain the role of system administration and network services in Linux.

LO-12 Description

Understand the way of getting system information.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	host name, disk partitions & sizes, users, kernel. Backup and restore files,Utility in GUI, reconfiguration hardware with	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6	-	Handout	NIL

	kudzu.						
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SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Paper pen test(Term work)		10	Handout	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

**CO-4
Description**

Explain the role of system administration and network services in Linux.

**LO-13
Description**

Explain network services.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
	Server –side setup, configuration, and basic administration of common networking services: Sambha, DNS, NIS,	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	6		Handout	

Apache, SMB, DHCP, Sendmail, FTP Other common services: tftp, pppd, proxy						
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SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Paper pen test (End semester Exam)	Student will be asked to	10	Test Paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

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	RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
			<i>C</i>	<i>0</i>	<i>4</i>	<i>4</i>	<i>0</i>	<i>4</i>	<i>4</i>	<i>14</i>	

COURSE NAME		LINUX AND SHELL PROGRAMMING					
CO-4 Description		Explain the role of system administration and network services in Linux.					
LO-14 Description		Apply Linux networking concept to setup a small network.					
SCHEME OF STUDY							
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1.	<p>Networking Services: Sambha, Apache, DHCP, FTP.</p> <p>Setup a small network in your lab and connect to that network Internet Protocol Service. These commands are used to send and receive files from Campus UNIX hosts and from other hosts and the Internet around the world. ifconfig, ping, traceroute, netstat, hostname, nslookup, route, host, arp, iwconfig, etc.</p>	Traditional Lecture method + Handout	Teacher will explain the contents and provide lab manual to students.		6	Lab Manual	
SCHEME OF ASSESSMENT							

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Practical	Students	10		Internal
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)					

SUGGESTED LIST OF EXPERIMENT FOR SHELL PROGRAMMING

NOTE: THIS IS ONLY FOR PRACTICE. DON'T ASSUME FOR ASSESSMENT.

Operators and Expressions

Write Shell Program to:-

1. Display the text entered by the user in bold.
2. Read a number and write the number in words.
3. Shell Script to swap values in two variables x and y.
4. Read the base and height of a triangle and find its area.
5. Read price of an article and calculate discount.
6. Convert Fahrenheit to Celsius Temperature or Celsius to Fahrenheit Temperature.
7. Find the number of files present in the current directory without using WC command.
8. Display current date, calendar, and the number of user logged.
9. Script to Store given command and execute them.
10. Ask user his/her name and then display it with a G'Day/Good morning Message.
11. Shell Script that outputs the number of users with entries in the Unix or Linux /etc/passwd file.

Decision Making

Write Shell Program to:-

1. Read 3 numbers and find the greater of the three.
2. Display sum of two number and to do calculations such as +, -, / etc
3. Read 5 digit number and calculate the sum of digit (if number is 78215, answer is 23)
4. Read source file and copy it to target file.
5. Read a number and find whether the number is odd or even.
6. Find out whether file has read, write and execute permission.
7. Find the validity of a given date.
8. Read a character (upper or lower), digit, special symbol and display message according to the character entered.
9. Read any year and find whether leap year or not.

10. A menu driven Shell script which has following options: 1. Contents of /etc/passwd 2. List of users currently logged 3. Present handling directory. 4. Exit And as per selected option do the job.
11. Shell program which gets executed the moment the user logs in, it should display the message "Good morning", "Good Afternoon", or "Good Evening" depending upon the time which the user logs in.
12. Read two numbers and display all the odd numbers between those two numbers.

Looping in Shell Scripting

Shell program to:-

1. Display numbers from 1 to 10.
2. Calculate the number of digits in a number read from the user.
3. Read a number and reverse the number for example 123 should output as 321.
4. Find whether an input number is palindrome or not.
5. Read a number and find the sum of digits.
6. Write script to print nos as 5,4,3,2,1 using while loop.

Miscellaneous

1. Write shell script that will add two nos, which are supplied as command line argument, and if this two nos are not given show error and its usage.
2. Write Script to find out biggest number from given three nos. Numbers are supplies as command line argument. Print error if sufficient arguments are not supplied.
3. Write Script, using case statement to perform basic math operation as follows + addition - subtraction x multiplication / division The name of script must be 'q4' which works as follows:
\$./q4 20 / 3, Also check for sufficient command line arguments.
4. Write Script to see current date, time, username, and current directory.
5. Write script to determine whether given file exist or not, file name is supplied as command line argument, also check for sufficient number of command line argument.

6. How to write script, that will print, Message "Hello World" , in Bold and Blink effect, and in different colors like red, brown etc using echo command.

7. Write shell script to show various system configuration like

- 1) Currently logged user and his logname
- 2) Your current shell
- 3) Your home directory
- 4) Your operating system type
- 5) Your current path setting
- 6) Your current working directory
- 7) Show Currently logged number of users
- 8) About your os and version ,release number , kernel version
- 9) Show all available shells
- 10) Show mouse settings
- 11) Show computer cpu information like processor type, speed etc
- 12) Show memory information
- 13) Show hard disk information like size of hard-disk, cache memory, model etc
- 14) File system (Mounted)

8. Write shell script to convert file names from UPPERCASE to lowercase file names or vice versa.

LINUX AND SHELL PROGRAMMING

CO(S) LO(S) MARKS AND TEACHING HOUR(S) ALLOTMENT

SCHEME FRAME-WORK: 90 HRS.

MARKS: 100 (T) + 50 (P)

COURSE OUTCOME	LEARNING OUTCOME	ASSESSMENT	HOURS	MARKS	REMARKS
CO-1 (20 HRS.) (30 Marks)	LO-1	EXTERNAL (ESE)	6	10	END SEM EXAM
	LO-2	INTERNAL (PT-I)	6	10	PROGRESSIVE TEST
	LO-3	EXTERNAL (ESE)	8	10	END SEM EXAM
CO-2 (27 HRS.) (45 Marks)	LO-4	EXTERNAL (PE)	8	15	PRACTICAL EXAM
	LO-5	EXTERNAL (ESE)	8	10	END SEM EXAM
	LO-6	INTERNAL(PF)	6	10	PRACTICAL FILE
	LO-7	EXTERNAL (ESE)	5	10	END SEM EXAM
CO-3 (19 HRS.) (35 Marks)	LO-8	INTERNAL (PT-II)	5	10	PROGRESSIVE TEST
	LO-9	EXTERNAL (PE)	8	15	PRACTICAL EXAM
	LO-10	EXTERNAL (ESE)	6	10	END SEM EXAM
CO-4 (24 HRS.) (40Marks)	LO-11	EXTERNAL (ESE)	6	10	END SEM EXAM
	LO-12	INTERNAL (TW)	6	10	TERM WORK
	LO-13	EXTERNAL (ESE)	6	10	END SEM EXAM
	LO-14	INTERNAL(PF)	6	10	PRACTICAL FILE

