Contents

AWK

1. Which one of the following is not true?
a) nawk is the new version of awk
b) gawk is the GNU version of awk
c) linux users have the gawk
d) nawk does not provide the additional capabilities in comparison of awk

2. An awk program can be run by
a) including the program in the command that runs awk
b) putting it into a file and run with a command
c) running an executable awk script
d) all of the mentioned
Explanation:The method used to run awk program depends on the program size and input files.

3. Which one of the following is not true?
a) in typical awk program, all input is read either from standard input or specified files
b) awk language divides its input into records and fields
c) awk reads an input record and the record is automatically seperated by the interpreter into pieces called "fields"
d) the number of fields need to be a constant
Explanation:The number of fields does not need to be a constant.

4. What is the meaning of $ sign in awk programming?
a) the word following is the name of variable
b) we are refering to a field or column in the current line
c) $ sign is used for comment

d) none of the mentioned

5. In awk program, the statement "print" with no items
a) is equivalent to "print $0"
b) prints the entire current record
c) both (a) and (b)
d) none of the mentioned

6. The print and printf statements can be told to send their output to other place except standard output, is called
a) **redirection** b) redistribution c) reinsertion d) none of the mentioned

7. The command "awk {print $1} san.txt" will
a) print the first line of file san.txt
b) print the first field of every line in san.txt
c) generate syntax error
d) none of the mentioned

8. What is the output of the command awk 'BEGIN {printf "%c\n",65}'
a**) A** b) 65 c) syntax error d) none of the mentioned
Explanation:The ASCII value of A is 65.

9. Which one of the following statement is not true about the format-control letters for printf statement in awk program?
a) "c" prints a number as an ASCII character
b) "d" prints a decimal integer
c) "h" prints an unsigned hexadecimal integer
d) "o" prints an unsigned octal integer
Explanation:"x" prints and unsigned hexadecimal integer

10. Which command on the command line provides the same output as this executable awk script?
```
#! /usr/bin/awk -f    BEGIN {
      print "sanfoundry"
  }
```
a) awk 'BEGIN {print "sanfoundry"}' b) awk 'print "sanfoundry"'
c) awk 'print {sanfoundry}' d) none of the mentioned

11. What is expression in awk programming?
a) expression evaluates a value to print, test or pass to a function
b) expression assigns a new value to a variable or field
c) both (a) and (b)
d) none of the mentioned

12. Which one of the following is not true?
a) there are 3 types of constant expressions: numeric, string and regular
b) arithmetic operators are used to evaluate expressions

c) assignment expression is an expression that stores a value into a variable
d) **comparison expressions does not compare strings for relationship**

13. All numeric values are represented within awk in
a) double precision floating point
b) integer
c) exponential notation
d) fixed point

14. Concatenation is performed by
a) writing expressions next to one another, with no operator
b) conditional operator
c) relational operator
d) matching operator

15. The comparison expression "x ~ y" will true if
a) x is not equal to y
b) the string x does not match the regular expression denoted by y
c) the string x matches the regular expression denoted by y
d) none of the mentioned

16. What is the output of this program?

```
#! /usr/bin/awk -f
BEGIN {
  print "20"<"9" ? "true":"false"
}
```

a) true b) false
c) syntax error d) none of the mentioned
Explanation: The operands of relational operators are converted to, and compared as string if both are not numbers. Strings are compared by comparing the characters of each. Hence 20 is less then 9.
Output: root@ubuntu:/home/sanfoundry# chmod +x test.awk root@ubuntu:/home/sanfoundry# ./test.awk true root@ubuntu:/home/sanfoundry#

17. What is the output of this program?

```
#! /usr/bin/awk -f
BEGIN {  a=10;  b=10;
print a==b ? "true":"false"
}
```

a) true b) false c) syntax error d) none of the mentioned
Output: root@ubuntu:/home/sanfoundry# chmod +x test.awk root@ubuntu:/home/sanfoundry# ./test.awk true root@ubuntu:/home/sanfoundry#

18. What is the output of this program?

```
#! /usr/bin/awk -f
```

```
BEGIN {
   var1="sanfoundry"       var2="linux"
print var1" provides "var2" MCQs "
}
```

a) sanfoundry provides linux MCQs b) var1 provides var2 MCQs
c) provides MCQs d) syntax error

Output: root@ubuntu:/home/sanfoundry# chmod +x test.awk root@ubuntu:/home/sanfoundry# ./test.awk
sanfoundry provides linux MCQs
root@ubuntu:/home/sanfoundry#

19. What is the output of this program?

```
#! /usr/bin/awk -f
BEGIN {
two=2;
two++;
    print two
}
```

a) two b) three c) 2 **d) 3**

Output: root@ubuntu:/home/sanfoundry# chmod +x test.awk root@ubuntu:/home/sanfoundry#
./test.awk
3
root@ubuntu:/home/sanfoundry#

20. What is the output of this program?

```
#! /usr/bin/awk -f
BEGIN {      one=10;
two=3;       print
(one%two)+10
}
```

a) (one%two)+10 b) 13 **c) 11** d) syntax error

Explanation: The remainder of 10/3 is 1. Remainder is added to 10.

Output: root@ubuntu:/home/sanfoundry# chmod +x test.awk root@ubuntu:/home/sanfoundry# ./test.awk
11
root@ubuntu:/home/sanfoundry#

21. The break statement
a) jumps out of the innermost for loop
b) jumps out of the innermost while loop
c) jumps out of the innermost do-while loop
d) all of the mentioned

22. Which statement skips over the rest of the loop body, causing the next cycle around the loop to begin immediately?

a) continue b) break c) next d) none of the mentioned

23. The next statement
a) immediately stops processing the current record
b) go to the next record
c) both (a) and (b)
d) none of the mentioned

24. If the argument is supplied to the exit statement,
a) its value is used as the exit status code for the awk process
b) syntax error will generate
c) exit returns status 0
d) exit returns status 1

25. Which statement instructs gawk to stop processing the current data file?
a) next b) **nextfile** c) exit d) exitfile

26. What is the output of this program?

```
#! /usr/bin/awk -f
BEGIN {      a=5
while (a<5) {          print
"sanfoundry"          a++;
    }
}
```

a) nothing will print
b) "sanfoundry" will print 5 times
c) program will generate syntax error
d) none of the mentioned
Explanation: The condition of while statement is false so commands inside the loop will not execute.
Output: root@ubuntu:/home/sanfoundry#
./test.awk root@ubuntu:/home/sanfoundry#

27. What is the output of this program?

```
#! /usr/bin/awk -f
BEGIN {
a=0
    do  {                  print
"sanfoundry"          a++
    } while (a<5)
}
```

a) "sanfoundry" will print 4 times
b) "sanfoundry" will print 5 times
c) nothing will print
d) syntax error **Output:**
root@ubuntu:/home/sanfoundry#
./test.awk sanfoundry sanfoundry

sanfoundry sanfoundry sanfoundry
root@ubuntu:/home/sanfoundry#

28. What is the output of this program?

```
#! /usr/bin/awk -f
BEGIN {
a=6
    do {                print
"sanfoundry"        a++
    } while (a<5)
}
```

a) nothing will print
b) "sanfoundry" will print 5 times
c) "sanfoundry" will print 4 times
d) "sanfoundry" will print only 1 time
Explanation: Even the condition is false of do-while loop, the body is executed once.
Output: root@ubuntu:/home/sanfoundry#
./test.awk sanfoundry
root@ubuntu:/home/sanfoundry#

29. What is the output of this program?

```
#! /usr/bin/awk -f
BEGIN {
for(i=0;i<=5;i++) {
print i         i++
    }
}
```

a) 0,2,4 will print
b) 1,3,5 will print
c) 1,2,3,4,5 will print
d) syntax error because i is not initialised **Output:** root@ubuntu:/home/sanfoundry# ./test.awk
0
2
4
root@ubuntu:/home/sanfoundry#

30. The command "awk '{if ("9">"10") print "sanfoundry" else print "linux"}'"
a) will print "sanfoundry"
b) will print "linux"
c) will generate syntax error
d) none of the mentioned
Explanation: Semicolon is required just before the else statement to parse the statement.
Output: root@ubuntu:/home/sanfoundry# awk '{if ("9">"10") print "sanfoundry" else print "linux"}' awk: {if ("9">"10") print "sanfoundry" else print "linux"} awk: ^ syntax error
root@ubuntu:/home/sanfoundry#

31. In awk, the built-in variable FS is
a) input field separator
b) output field seperator
c) record separator
d) subscript seperator

32. What is FNR?
a) FNR is the current record number in the current file
b) FNR is the number of fields in the current input record
c) FNR is an array contains the value of environment
d) none of the mentioned

33. RSTART is set by invoking the
a) match function b) index function
c) asort function d) split function

34. Which one of the following is used by awk to control the conversion of numbers to string?
a) RS **b) OFMT** c) SUBSEP d) RSTART

35. In awk program, the name of the array can not be same with the
a) name of variable b) value of the array element
c) both (a) and (b) d) none of the mentioned

36. What is the output of the program?

```
#! /usr/bin/awk -f
#This filename is text.awk
BEGIN {
   print FILENAME
}
```

a) test.awk **b) program will print nothing**
c) syntax error d) fatal error
Explanation: The built-in variable FILENAME is the name of file that awk is currently reading and in this program there is no file listed on the command line.
Output: root@ubuntu:/home/sanfoundry#
./test.awk root@ubuntu:/home/sanfoundry#

37. What is the output of the program?

```
#! /usr/bin/awk -f
BEGIN {
a[1]="sanfoundry"
a[2]="sanfoundry"
for(i=1;i<3;i++) {          print
a[i]
    }
}
```

a) "sanfoundry" will print 2 times
b) "sanfoundry" will print 3 times
c) program will generate error becasue 2 array elements have the same value
d) program will generate syntax error **Output:** root@ubuntu:/home/sanfoundry# ./test.awk sanfoundry
sanfoundry root@ubuntu:/home/sanfoundry#

38. What is the output of the program?

```
#! /usr/bin/awk -f
BEGIN {
   a[1]="sanfoundry"
   delete a[1]
   print a[1]
}
```

a) program will print "sanfoundry" **b) program will print nothing**
c) program will generate syntax error d) program will generate fatal error
Explanation: The delete command deletes the array element.
Output:
root@ubuntu:/home/sanfoundry# ./test.awk root@ubuntu:/home/sanfoundry#

39. What is the output of the program?

```
#! /usr/bin/awk -f
BEGIN {
a["linux","MCQ"]="sanfoundry"
   print a["linux","MCQ"]
}
```

a) sanfoundry b) linux MCQ c) a["linux","MCQ"] d) syntax error
Output: root@ubuntu:/home/sanfoundry#
./test.awk sanfoundry
root@ubuntu:/home/sanfoundry#

40. What is the output of the program?

```
#! /usr/bin/awk -f
BEGIN {
a[1,1]=0      a[1,2]=1
a[2,1]=2      a[2,2]=3
        for(i=1;i<3;i++) {

for(j=1;j<3;j++) {
print a[i,j]
      }
   }
}
```

a) 0 1 2 3 **b) 0 2** c) 1 3 d) syntax error
Output: root@ubuntu:/home/sanfoundry#
./test.awk
0
2
root@ubuntu:/home/sanfoundry#

Linux Command

1. The dmesg command
a) Shows user login logoff attempts

b) Shows the syslog file for info messages
c) kernel log messages
d) Shows the daemon log messages

2. The command "mknod myfifo b 4 16"
a) Will create a block device if user is root
b) Will create a block device for all users
c) Will create a FIFO if user is not root
d) None of the above

3. Which command is used to set terminal IO characteristic?
a) tty b) ctty c) ptty **d) stty**

4. Which command is used to record a user login session in a file
a) macro b) read **c) script** d) none of the above

5. Which command is used to display the operating system name
a) os b) Unix c) kernel **d) uname**

6. Which command is used to display the unix version
a) uname –r b) uname –n c) uname –t d) kernel

7. Which command is used to print a file
a) print b) ptr **c) lpr** d) none of the above

8. Using which command you find resource limits to the session?
a) rlimit **b) ulimit** c) setrlimit d) getrlimit

9. Which option of ls command used to view file inode number
a) –l b) –o c) –a d) **–i**

10. find / -name '*' will
a) List all files and directories recursively starting from /
b) List a file named * in /
c) List all files in / directory
d) List all files and directories in / directory

11. Which command is used to display the octal value of the text
a) octal b) text_oct c) oct **d) od**

12. Which command is used to view compressed text file contents
a) cat b) type **c) zcat** d) print

13. Which command changes a file's group owner

a) cgrp **b) chgrp** c) change d) group

14. Which command is used to extract intermediate result in a pipeline
a) tee b) extract c) exec d) none of the above

15. Which command is used to extract a column from a text file
a) paste b) get **c) cut** d) tar

16. Which command is used to display disk consumption of a specific directory
a) du b) ds c) dd d) dds

17. Which command is used to perform backup in unix?
a) backup **b) cpio** c) zip d) gzip

18. Which command creates an empty file if file does not exist?
a) cat **b) touch** c) ed d) read

19. Which option of rm command is used to remove a directory with all its subdirectories
a) –b b) –o c) –p **d) –r**

20. Which command is used to identify file type?
a) Type b) **File** c) Finfo d) Info

21. Command used to determine the path of an executable file is
a) which b) where c) wexec d) what

22. Command used to count number of character in a file is
a) grep **b) wc** c) count d) cut

23. Which of these commands could you use to show one page of output at a time?
a) less b) sed c) pause d) grep

24. Which commands will give you information about how much disk space each file in the current directory uses?
a) ls –l b) ls –la **c) du** d) ls -a

25. Which of the following command output contains userid?
a) ls b) help c) date **d) ls –l**

26. Which command is used to display all the files including hidden files in your current and its subdirectories ?
a) ls –aR b) ls –a c) ls –R d) ls –l

27. Which of the following commands can be used to copy files across systems?
a) ssh b) telnet c) rsh **d) ftp**

28. pwd command displays

a) user password
b) password file content
c) present working directory
d) none of the mentioned

29. Which of the following commands can be used to change default permissions for files and directories at the time of creation

a) Chmod b) Chown **c) Umask**d) Chgrp

30. Which tar command option is used to list the files in a tape archive format?

a) cvf b) tvf c) xvf d) ovf

31. Which of the following commands will allow the user to search contents of a file for a particular pattern

a) touch **b) grep** c) find d) ls

32. Write the command to display the current date in the form dd/mm/yyyy.

a) date +%d/%m/%Y b) date +"%d/%m/%Y"
c) date +/%d/%m/20%y d) date +"/%d/%m/20%y"

33. The command syntax to display the file 'sample.txt' one page at a time is

a) man sample.txt>more b) cat sample.txt<more
c) cat sample.txt|more d) None of the above

34. Which one shows the name of the operating system?

a) uname –n b) uname –r **c) uname –o** d) uname –m

35. How do you add (append) a file "file1" to the example.tar file

a) no you cannot add a file to example.tar
b) tar -cvf example.tar file1
c) tar -rvf file1 example.tar
d) tar -evf file1 example.tar

36. How to execute ls command inside a vi editor?

a) !ls b) :ls **c) :!ls** d) we can't execute

37. Which command gives the first byte where the difference is in the file1 & file2?

a) diff **b) cmp** c) comm d) ls -a

38. To open a file file1 with cursor at line number 4

a) vi +num file1 b) vi +set num file1
c) vi + "set num" file1 d) vi +/se nu file1

39. sed is a command typically used for

a) Perform complex calculations
b) Perform FIFO based non-blocking I/O

c) Modify/print selective contents of a file
d) None of the mentioned

40. What communication command provides communication to another user logged on by writing to the bottom of their terminal?
a) talk b) write c) chat d) transmit

41. Which screen manipulation command sets the screen back to normal?
a) tput cup b) tput smso **c) tput rmso** d) tput blink

42. Which command will you use to see the available routes?
a) show route b) route status **c) netstat –r** d) none of the mentioned

43. fc stands for
a) find command b) fix command
c) both (a) and (b) d) none of the mentioned
Explanation:'fc -l' is used to list history of commands and 'fc -e' to edit them and 'history' command also provides the histroy of commands.

44. Which command is used to reexecute the previous command?
a) !! b) !cat c) !3 d) !$
Explanation: '!cat' will reexecute the last cat command, '!3' will reexecute the third last command and '!$' will execute the last argument of previous command.

45. Which one of the following is not correct about job control in bash shell?
a) it is the ability to stop and resume any process running in shell at a later point
b) user employs this facility via an interactive interface supplied by the kernel's terminal driver and bash **c) it is the ability to create any process**
d) none of the mentioned

46. Which command allows to view the current jobs being handled by the shell?
a) jobs b) view c) show d) none of the mentioned

47. What is job number?
a) same as PID
b) a unique number, assigned to each job in shell
c) both (a) and (b)
d) none of the mentioned

48. Ctrl-Z key combination
a) generates a SIGINT signal
b) stops the process running in the shell
c) kills the process running in the shell
d) both (a) and (c)
Explanation:Ctrl-Z key combination generates a SIGTSTP signal and stops the process running in the shell.

49. Which command brings a background job into the foreground?
a) fg b) bg c) jobs %1 d) none of the mentioned
Explanation: bg command brings a foreground job into the background.

50. 'kill %s' command will
a) terminate the job whose command line starts with s
b) terminate the last job
c) terminate the first job
d) none of the mentioned

51. 'stty tostop' command will
a) stop all jobs running in the shell
b) stop background jobs if they try to send output to the terminal
c) this is not a valid command
d) none of the mentioned

52. Which command terminates a running process by name of the process?
a) kill b) pkill **c) killall** d) none of the mentioned

53. Which command sets up shorthand for command or command line?
a) set **b) alias** c) new d) echo

54. What is the function of bind command in bash shell?
a) defining new macros
b) defining new key bindings for existing commands
c) dumping the installed key bindings
d) all of the mentioned

55. The command 'compgen -c' shows
a) all variable names
b) all system wide aliases
c) full list of all commands
d) none of the mentioned

56. Which statement resumes the next iteration of a for, while, select, or untill loop?
a) continue b) break c) complete d) command

57. Which command prints the directory stack?
a) cd **b) dirs.** c) popd d) pushd

58. The command 'disown -r'
a) removes all jobs
b) removes all running jobs
c) marks jobs to not receive SIGHUP when bash exits
d) marks all jobs

59. The command 'enable -n '
a) enables the specified built-in command
b) disables the specified built-in command
c) print the status of the command
d) none of the mentioned

60. Which command can create environment variable?
a) export b) set c) read d) none of the mentioned

61. Which command concatenate the specified argument into a single command, then execute the command?
a) fc **b) eval** c) exec d) getopts

62. The command 'hash'
a) manages a internal hash table
b) find and remember the full path name of the specified command
c) displays used command names and the number of hits
d) all of the mentioned

63. The 'logout' built in command is used to
a) shutdown the computer
b) logoff of the computer
c) logout the current user
d) to exit the current shell

64. The command 'umask -S'
a) prints the current mask using symbolic notation
b) prints the current mask using octal numbers
c) sets the mask to 000
d) sets the mask to 777

65. The 'mapfile' command
a) reads lines of standard input and assigns each to the element of an indexed array b) reads lines of standard output file
c) reads lines of standard error file
d) none of the mentioned

66. Which option of the kill command sends the given signal name to the specified process?
a) –l b) –n **c) –s** d) -a

67. Which command removes a directory from directory stack?
a) dirs. **b) popd** c) pushd d) rm

68. Which command puts a script to sleep untill a signal is recieved?
a) sleep **b) suspend** c) disown d) break

69. The command 'ulimit'
a) set a limit on specified resource for system users
b) set/show process resource limit
c) both (a) and (b)
d) none of the mentioned

70. Which command identifies the resource of a command?
a) type b) typeset c) select d) source

71. Which command wait for the specified process to complete and return the exit status?
a) sleep **b) wait** c) delay d) stop

72. Which command prints the accumulated user and system times for processes run from the shell?
a) time **b) times** c) both (a) and (b) d) none of the mentioned

73. Which command runs the shell built-in command 'command' with the given argument? **a) builtin**
b) caller
c) there is no command present for this purpose
d) none of the mentioned

74. Which option of the command 'cd' use the actual filesystem path for cd.. and the value of pwd?
a) –l b) –L c) –p **d) -P**

75. Which command generates possible completions for string according to the and write it to standard output?
a) compgen b) complete c) continue d) none of the mentioned

76. Which command executes 'command' in place of the current process instead of creating a new process?
a) exec b) command c) trap d) none of the mentioned

77. After running this program, as you press 's', what will be the output of the program?

```
#!/bin/bash
  echo "press 's' to print Sanfoundry"
read var    if $var=s
  then    echo
"Sanfoundry"
  else    echo "You did not
press s"    fi
  exit 0
```

a) Sanfoudry b) You did not press s
c) program will generate an error message d) none of the mentioned
Explanation:The condition of if statement must be in square brackets.
Output: root@ubuntu:/home/sanfoundry#./test.sh
press 's' to print Sanfoundry s
./test.sh: line 4: s=s: command not found
You did not press s

78. After running this program, as your press 4, what will be the output of the program?

```
#!/bin/bash
```

```
  echo "How many times you want to print 'Sanfoundry'"
read value    for ((i=0;i<$value;i++))    do    echo
"Sanfoundry";
  done
exit 0
```

a) 'Sanfoudry' will print 4 times
b) 'Sanfoudry' will print 3 times
c) 'Sanfoudry' will print 5 times
d) program will generate an error message

Output:
```
root@ubuntu:/home/sanfoundry#
./test.sh How many times you want to print
'Sanfoundry'
4
Sanfoundry
Sanfoundry
Sanfoundry Sanfoundry
root@ubuntu:/home/sanfoundry#
```

79. What is the output of this program?
```
#!/bin/bash    for i in 2 3 7
do    echo "Sanfoundry"
  done
exit 0
```

a) 'Sanfoundry' will print 3 times
b) nothing will print
c) program will generate an error message
d) none of the mentioned

Output:
```
root@ubuntu:/home/sanfoundry#
./test.sh
Sanfoundry
Sanfoundry Sanfoundry
root@ubuntu:/home/sanfoundry#
```

80. How can you come out of the loop in this program?
```
#!/bin/bash    read x    while [ $x != "hello" ]
  do
  echo "Try to come out of the loop"
read x    done    echo "Welcome"
  exit 0
```

a) by entering "hello"
b) by entering anything except "hello"
c) it is not possible
d) none of the mentioned

Output:
```
root@ubuntu:/home/sanfoundry#
./test.sh hi
Try to come out of the loop hey
Try to come out of the loop
hello
Welcome
root@ubuntu:/home/sanfoundry#
```

81. What is the output of this program?
```
#!/bin/bash
```

echo "Which file do you want to check" read x until [-e $x] do echo "The file does not exist. Do you want to create? y/n" read a if [$a = y]; then touch $x echo "Your file has been created successfully." fi done echo "The file is present in this directory" exit 0

a) it checks the existance of your entered file in the present working directory
b) it creates the file if file does not exists
c) program runs untill you create the file
d) **all of the mentioned Output:** root@ubuntu:/home/sanfoundry# ./test.sh
Which file do you want to check
san.c
The file does not exist. Do you want to create? y/n n
The file does not exist. Do you want to create? y/n n
The file does not exist. Do you want to create? y/n y
Your file has been created successfully. The file is present in this directory
root@ubuntu:/home/sanfoundry# ls
san.c test2.txt test2.txt~ test.sh test.sh~ test.txt test.txt~ root@ubuntu:/home/sanfoundry#

82. After running this program, if you enter 1000, then what will be the output of the program? #!/bin/bash

```
echo "Please enter a number"
read a
if [ $a -lt 100 ]; then echo "It is less than 100"; elif [ $a -lt 1000 ]; then echo "It is less than 1000" else echo "It is greater than 1000"
fi
exi
t 0
```

a) It is greater than 1000 b) It is less then 1000
c) It is equal to 1000 d) none of then mentioned
Output: root@ubuntu:/home/sanfoundry# ./test.sh
Please enter a number
1000
It is greater than 1000
root@ubuntu:/home/sanfoundry#

Linux Environment

1. To increase the response time and throughput, the kernel minimizes the frequency of disk access by keeping a pool of internal data buffer called

a) Pooling b) Spooling **c) Buffer cache** d) Swapping

2. At start of process execution, STDOUT & STDERR
a) Point to current terminal device
b) Are closed
c) Point to special files on the system
d) None of the above

3. wtmp and utmp files contain:

a) Temporary system data
b) User login-logout log
c) The user's command execution log
d) The user's su and sudo attempts

4. Which is the core of the operating system?
a) Shell **b) Kernel** c) Commands d) Script

5. ILP32 stands for
a) 32 bit Integer, Long & Pointer
b) 32 bit Integrated Long & Pointer
c) 32 bit Intelligent Long & Pointer
d) 32 bit Long & Pointer

6. Single Unix Specification Version 2 provides enhanced support for
a) 16 bit Unix b) 32 bit Unix **c) 64 bit Unix** d) 8 bit Unix

7. Under UNIX the key board is the default input device and the monitor is the default output device
a) True b) False

8. Which among the following interacts directly with system hardware?
a) Shell b) Commands **c) Kernel** d) Applications

9. Applications communicate with kernel by using:

a) System Calls b) C Programs c) Shell Script d) Shell

9. Solaris is the name of a flavor of UNIX from
a) HP b) IBM c) Digital Equipment Corp **d) Sun Microsystems**

10. Which of the following is "NOT" a UNIX variant ?
a) Solaris b) AIX c) IRIX **d) AS400**

11. The system calls in UNIX is written using which language

a) C b) C++ c) Assembly Language d) Fortran

12. Which of the following enables multi-tasking in UNIX?
a) Time Sharing b) Multi programming
c) Multi user d) Modularity

13. Which of the following is considered as the super daemon in Unix?
a) sysinit **b) init** c) inetd d) proc

14. Unix is which kind of Operating System?
a) Multi User b) Multi Processes c) Multi Tasking **d) All the above**

15. SVR4 stands for?
a) Standard Version Release 4 b) System Version Release 4
c) Standard Five Release 4 **d) System Five Release 4**

16. Lp0 device file is used to access:
a) Floppy b) Cdrom **c) Printer** d) Tape drive

17. Syntax of any Unix command is:
a) command [options] [arguments] b) command options [arguments]
c) command [options] [arguments] d) command options arguments

18. SVR4 was developed by
a) Sun Microsystems b) AT&T
c) University of Berkeley **d) Sun and AT&T jointly**

19. Which of these is not a Unix Flavor?
a) BSD **b) MAC** c) AIX d) IRIX

20. Which of the following statement is FALSE ?
a) Unix supports multiple users
b) Linux is an open source operating system and the source code is shared
c) Shell takes care of inter process communication
d) Shell provides the feature of I/O Redirection

21. Which of the following UNIX flavor is from IBM?
a) BSD b) Solaris c) HP-UX **d) AIX**

22. x86-32 uses which programming model?
a) IP16 b) IP32 c) ILP16 **d) ILP32**

23. What are the sizes of (Integer/Long/Pointer) in LP64 programming model?
a) 8/8/8 b) 4/4/8 **c) 4/8/8** d) 4/8/4

24. Which among the following is used to write small programs to control Unix functionalities?

a) Shell Commands **b) Shell Script** c) Filters d) C Language

25. What control character signals the end of the input file?
a) ctrl + a b) ctrl + b c) ctrl + c **d) ctrl + d**

26. How do you get help about the command "cp"?
a) help cp **b) man cp** c) cd ?

File Management

1. Which of the following time stamps need not exist for a file on traditional unix file system
a) Access Time b) Modification Time **c) Creation Time** d) Change Time

2. Which command is used to set limits on file size
a) fsize b) flimit **c) ulimit** d) usize

3. Which option of rmdir command will remove all directories a, b, c if path is a/b/c
a) –b b) –o **c) –p** d) –t

4. Which represents the user home directory
a) / b) . c) .. **d) ~**

5. If a file is removed in Unix using 'rm' then
a) The file can be recovered by a normal user
b) The file cannot be recovered by a user
c) The file can be fully recovered provided the sytem is not rebooted
d) The file will be moved to /lost+found directory and can be recovered only by administrator's intervention

6. Executing the 'cd ..' command when at the root level causes
a) Error message indicating the user can't access beyond the root level
b) Behavior is unix-flavor dependent
c) Results in changing to the 'home' directory
d) **Nothing happens**

7. How do you rename file "new" to file "old"?
a) mv new old b) move new old c) cp new old d) rn new old

8. What command is used to copy files and directories?
a) copy **b) cp** c) rn d) cpy

9. When mv f1 f2 is executed which file's inode is freed?
a) f1 **b) f2** c) new inode will be used d) implementation dependent

10. Any file's attribute information is stored in which structure on the disk
a) Inode b) Data blocks c) File blocks d) Directory file

11. By default if any regular file is created, the number of link is displayed as 1 ?
a) True b) False

12. How many links are created when we creat a directory file?
a) 1 **b) 2** c) 3 d) 4

13. A user creates a link to a file file1 using the following command "ln file1 file2". Which of the following is not true?
a) file1 and file2 have the same inode numbers
b) The number of links for file1 is displayed as 1
c) The number of links for file1 is displayed as 2
d) The number of links for file2 is displayed as 2

14. There are two hard links to the "file1" say hl and h2 and a softlink sl. What happens if we deleted the "file1"?
a) We will still be able to access the file with hl and h2 but not with sl
b) We will not be able to access the file with hl and h2 but with sl
c) We will be able to access the file with any of hl, h2 and sl
d) We will not be able to access the file with any of hl, h2 and sl

15. If two files on same partition point to the same inode structure they are called
a) Soft links **b) Hard links** c) Alias d) Special files

16. Deleting a soft-link
a) Deletes the destination file
b) Deletes both the softlink and the destination file
c) Deletes just the softlink
d) backup of the destination is automatically created

17. Creation of hardlinks that point across partitions
a) is allowed only to root user b) Can be done by all users
b) The effects are unspecified **d) is not allowed**

18. Which command is used to change permissions of files and directories?
a) mv b) chgrp **c) chmod** d) set

19. Where can I find the printer in the file structure?
a) /etc **b) /dev** c) /lib d) /printer

20. Which of the following statement is true?
a) The cp command will preserve the meta data of the file
b) The sort command by default sorts in the numeric order
c) The mv command will preserve the meta data of the file
d) The command ps will display the filesystem usage

21. What UNIX command is used to update the modification time of a file?

a) time b) modify c) cat **d) touch**

22. The soft link will increase the link counter of the file.(T/F)
a) True **b) False**

23. When you use the ln command, which of the following occurs?
a) a file is created that points to an existing file
b) a file is created that is a copy of an existing file
c) a file is moved from one location to another
d) a file is renamed

24. srwxr-xrw- is a
a) internet socket file **b) unix domain socket file**
c) symbolic link d) shared file

25. Binary or executable files are:
a) Regular files b) Device files c) Special files d) Directory files

26. The directory file contains:
a) File names & File Sizes
b) File names & Inode Numbers
c) File names & Address
d) File names & Permissions

27. Which directory contain device special files?
a /etc
b) /etc/dev
c) /root/bin
d) /dev

28. Which of the following is not a valid file type on Linux
a) Socket
b) Softlink
c) Inode
d) FIFO

29. Which of the following is not correct statement regarding file types?
a) Hard links share same inode number
b) Soft links cannot be created across partitions
c) Socket files are Unix domain sockets
d) Character file is a special file

30. Which are the two types of device files?
a) Character & Block
b) Character & Socket
c) Block & FIFO

d) Input & output

31. Which is an example for character special file?
a) Hard disk
b) CD-ROM
c) Terminal
d) Memory

32. Which is an example for block special file?
a) Virtual Terminal
b) CD-ROM
c) Terminal
d) Serial modem

33. All device files are stored in which directory?
a) /etc
b) /bin
c) /dev
d) /usr

34. The file permission 764 means:
a) Every one can read, group can execute only and the owner can read and write
b) Every one can read and write, but owner alone can execute
c) Every one can read, group including owner can write, owner alone can execute
d) Every one can read and write and execute

35. The permission -rwxr–r– represented in octal expression will be a)
777
b) 666
c) 744
d) 711

36. Effective user id can be set using following permission
a) 0777
b) 2666
c) 4744
d) 1711

37. Effective group id can be set using following permission
a) 0777
b) 2666
c) 4744
d) 1711

38. Sticky bit can be set using following permission
a) 0777

b) 2666
c) 4744
d) 1711

39. The permission -rwSr–r– represented in octal expression will be a)
0777
b) 2666
c) 4744
d) 4644

40. The permission -rwxr-sr– represented in octal expression will be a)
0777
b) 2766
c) 2744
d) 2754

41. If user tries to remove (rm) a readonly file (444 permission), what will happen?
a) The file is removed successfully (and silently)
b) The rm command prompts for a confirmation, the command is successful upon confirmation
c) The rm command prompts for a confirmation, however the operation fails because of insufficient permissions
d) The rm command fails because of insufficient permissions

42. A user does a chmod operation on a file. Which of the following is true?
a) The last accessed time of the file is updated
b) The last modification time of the file is updated
c) The last change time of the file is updated
d) None of the above

43. If the umask value is 0002. what will be the permissions of new directory a)
777
b) 775
c) 774
d) 664

44. What is the command to set the execute permissions to all the files and subdirectories within the directory /home/user1/direct
a) chmod –r +x /home/user1/direct
b) chmod –R +x /home/user1/direct
c) chmod –f –r +x /home/user1/direct
d) chmod –F +x /home/user1/direct

45. The permission -rwxr-xr-t represented in octal expression will be a)
0777
b) 1755
c) 1754

d) 2754

46. With a umask value of 112, what is the default permission assigned to newly created regular file?
a) —x–x-wx
b) -rw-rw-r–
c) -r-xr-x-r–
d) -rw-rw-r–

47. Which command is used to assign read-write permission to the owner? a)
chmod a+r file
b) chmod o+r file
c) chmod u=rw file
d) chmod og-r file

48. Given the command
$ chmod o-w datafile
a) sets write permission to everyone for datafile
b) sets write permission to others for datafile
c) clears write permission to everyone for datafile
d) clears write permission to others for datafile

49. Which of these commands will set the permissions on file textfile to read and write for the owner, read for the group, and nothing for everyone else? a) chmod 046 textfile
b) chmod 640 textfile
c) chmod 310 textfile
d) chmod rw r nil textfile

50. If you are a root user, how can you grand execute permission only for the owner of the file project1? a.
chmod +x project1
b. chmod u+x project1
c. chmod a+x project1
d. chmod U+X project1

51. A user executes the following command successfully:
$ chmod +x file1.txt
Which of the following is true of the output of this command?
a) The command results in adding execute permission to the user who ran this command
b) The command results in adding execute permission for the owner of the file
c) The command results in an error since the file is not an executable file
d) The command results in adding execute permission for all users (i.e., user,group & others)

52. What does chmod +t do?
a) wrong syntax
b) set effective userid for filename
c) set effective groupid for filename

d) set the sticky bit

53. Which of the following umask settings doesn't allow execute permission to be set by default on directory files
a) 222
b) 111
c) 000
d) 444

54. Which of the following umask settings allow execute permission to be set by default on regular files a) 222
b) 111
c) 000
d) **None of the given choices**

55. The command chmod 4777 a.out
a) will set the suid bit of a.out
b) will set the suid bit of a.out only if the command is issued by root
c) is not a valid command
d) will set the sticky bit of a.out

56. Which command is used to check filesystem usage in a system? a) mount
b) df
c) du
d) dd

57. Which among the following allows fast file system recovery? a) Ext2
b) Journaling
c) Caching
d) Sysfs

58. Which filesystem can be used to change certain kernel parameters at runtime using sysctl command? a) Ext3
b) Sysfs
c) Ext4
d) Procfs

59. Filesystem for CDROM is:
a) Ext2
b) Ext3
c) Isofs
d) Procfs

60. Which file system has journaling capability?

a) Ext2
b) Ext4
c) Isofs
d) Procfs

61. Which file contains the filesystems to be automatically mounted during boot? a) /etc/mount
b) /etc/fstab
c) /etc/inittab
d) /etc/boot

62. ____ is a directory (which should exist), on which to mount the file system? a) Root
b) Boot
c) Mount-point
d) Partition

63. Which command is used to mount file system read only.
a) mount –a
b) mount –v
c) mount –f
d) mount –r

64. Operating system kernel must be located in
a) /
b) /boot
c) either in / or in /boot
d) none of the mentioned

65. Which one of the following is a mount point for a temporarily mounted filesystem? **a) /mnt directory**
b) /media directory
c) /dev directory
d) none of the mentioned

66. What is /root?
a) root filesystem
b) home directory of the root user
c) the directory which contains all the directories of the filesystem
d) none of the mentioned

67. System binaries are stored in
a) /sbin directory
b) /usr/sbin directory
c) /usr/local/sbin directory

d) all of the mentioned

68. The /dev directory contains the
a) device drivers
b) device files
c) kernel modules of device drivers
d) none of the mentioned

69. The contents of root filesystem is responsible to
a) boot the system
b) recover the system
c) repair the system
d) **all of the mentioned**

70. Static files of the bootloader are installed in
a) /boot directory
b) /root directory
c) /bin directory
d) /sbin directory

71. Linux filesystem contains mainly
a) ordinary files
b) device files
c) directory files
d) all of the mentioned

72. In linux filesystem, the passwords of different users are stored in
a) /etc/passwd file
b) /bin/passwd file
c) /etc/shadow file
d) /bin/shadow file
Explanation: Passwords are visible in encrypted format in the file.

73. Superuser can change the _____ permissions of any file.
a) owner
b) group
c) other
d) all of the mentioned

74. When we install a new package in linux system, then
a) all the files of the packages are installed in a single directory
b) different files are installed at different locations of the file system
c) package works just after extraction, installation is not required
d) none of the mentioned

75. Host specific configuration files are installed in

a) /etc directory
b) /lib directory
c) /root directory
d) /bin directory

76. The directory /media is the
a) mount point for removable media
b) mount point for filesystem
c) both (a) and (b)
d) none of the mentioned

77. What is /bin/sh ?
a) bourne shell
b) hard or symbolic link to the real shell command
c) bash shell
d) both (b) and (c)

78. The /boot directory stores the data that is used
a) before the kernel begins executing user mode programs
b) after the kernel begins executing user mode programs
c) before the bootloader is loaded in the RAM
d) none of the mentioned

79. Which one of the directory does not contain binary files? a) /bin
b) /sbin
c) /etc
d) none of the mentioned

80. Kernel modules are present in
a) /lib directory
b) /root directory
c) /boot directory
d) none of the mentioned

81. The directory /opt is reserved for
a) installation of add-on application software packages
b) optional booting files
c) optional user specific files
d) none of the mentioned

82. The directory /srv contains
a) site-specific data which is served by the system
b) all the system files
c) all the service files provided by the specific user
d) none of the mentioned

83. Any file or directory present in the _____ directory may not be reserved between the invocation of the program. a) /var
b) /tmp
c) /etc
d) all of the mentioned

Process Management

1. If a program executing in background attempts to read from STDIN a) It is terminated
b) It's execution is suspended
c) STDIN is made available to it
d) None of the mentioned

2. Which command is used to bring the background process to forground? a) bg
b) fg
c) background
d) forground

3. How to run a process in the background?
a) &
b) *
c) ?
d) |

4. Which command can be executed by a user who is already logged into the system, in order to change to the root user? (type the command without any parameters) **a) su**
b) root
c) chroot
d) user

5. Process information in the current shell can be obtained by using a) kill
b) bg
c) fg
d) ps

6. Which signal is sent by the command "kill -9 " ? a) INT
b) TERM
c) KILL
d) STOP

7. Which of the following values for STAT column of ps command is not true: a)
status R means running
b) Status S means sleeping
c) Status E means exited
d) Status Z means zombie

8. When a child process exits before the parent process exits, which of the following is true: a)
the child process becomes defunct
b) the parent process becomes defunct
c) if the parent process does not handle SIGCHLD, the child process becomes a zombie d)
none of the above

9. A user issues the following command sequence:
$ a.out &
$ bash
$ a.out &
If the user kills the bash process, then which of the following is true? a)
The second a.out process is also terminated
b) The second a.out process becomes a defunct process
c) The first a.out process becomes a zombie process
d) init process becomes parent of second a.out process

10. The signal sent to a process when the Ctrl-C key is pressed is a)
KILL
b) TSTP
c) TERM
d) INT

11. we can change the priority of a running process using
(a) nice
(b) renice
(c) priority cannot be changed for a running process
(d) only superuser can change the priority

12. nohup is used to
a) automatically hang up the process after logout
b) continue the process after logout
c) create backgroung process
d) manually hang up the process after logout

SED Editor

1. What is sed?
a) a non-interactive stream editor
b) an IDE
c) a hex editor

d) none of the mentioned

2. Sed maintains the hold space (a buffer) to
a) copy the each line of input
b) save the data for later retrieval
c) both (a) and (b)
d) none of the mentioned
Explanation: To copy the each line of input, sed maintains the pattern space.

3. Which is the correct syntax for sed on command line?
a) sed [options] '[command]' [filename]
b) sed '[command]' [options] [filename]
c) sed [filename] [options] '[command]'
d) sed '[command]' [filename] [options]

4. If any sed command does not specify any address then the command is applied to **a) each input line**
b) none of the input line
c) last input line
d) none of the mentioned

5. If no file is specified in sed command then
a) sed command will not work
b) sed reads from standard input
c) sed reads the data already present in buffer
d) it is necessary to provide the filename

6. Which sed command deletes the specified address range
a) [address range]/s
b) [address range]/p
c) [address range]/d
d) [address range]/y
Explanation: To use the command correct syntax specified for sed editor should be followed.

7. Which command is used to replace word 'cat' (already present in the file) with 'mouse' at all places in a file 'old.txt' and save the result in a new file 'new.txt'? **a) sed 's/cat/mouce/g' old.txt > new.txt**
b) sed 's/cat/mouse' old.txt new.txt
c) sed '/s/cat/mouse/g' old.txt new.txt
d) sed '/s/cat/mouse' old.txt > new.txt

8. Which command will delete all the blank lines in file old.txt? a) sed '/d' old.txt
b) sed '/^/d' old.txt
c) sed '/^$/d' old.txt
d) sed '/^*/d' old.txt

9. The command "sed -n '/sanfoundry/p' old.txt" will
a) print the lines containing the word 'sanfoundry' in file old.txt
b) delete the lines containing the word 'sanfoundry' in file old.txt
c) will generate an error message
d) none of the mentioned

10. Which option is used by sed to specify that the following string is an instruction or set of instructions? **a) -n**
b) -e
c) -f
d) -i

Shell Programming

1. What will be output of following command:
$ echo "The process id is" $$$$
a) The process id is $$
b) The process id is $<pid>$<pid>
c) The process id is <pid><pid>
d) The process id is $$$$

2. What would be the current working directory at the end of the following command sequence? $ pwd
/home/user1/proj
$ cd src $ cd generic $ cd .
$ pwd
a) /home/user1/proj
b) /home/user1/proj/src
c) /home/user1
d) **/home/user1/proj/src/generic**

3. How do you print the lines between 5 and 10, both inclusive
a) cat filename | head | tail -6
b) cat filename | head | tail -5
c) cat filename | tail +5 | head
d) cat filename | tail -5 | head -10

4. Create a new file "new.txt" that is a concatenation of "file1.txt" and "file2.txt"
a) cp file.txt file2.txt new.txt
b) cat file1.txt file2.txt > new.txt
c) mv file[12].txt new.txt
d) ls file1.txt file2.txt | new.txt

5. which of these is NOT a valid variable in bash
a) __ (double underscore)
b) _1var (underscore 1 var)
c) _var_ (underscore var underscore)
d) some-var (some hyphen var)

6. What is the output of the following code:
os=Unix echo 1.$os 2."$os" 3.'$os' 4.$os
a) 1.Unix 2.Unix 3.Unix 4.Unix
b) 1.Unix 2.Unix 3.$os 4.Unix
c) 1.Unix 2.Unix 3.Unix 4.$os
d) 1.Unix 2.$os 3.$os 4.$os

7. What is the return value ($?) of this code: os
= Unix

[$osName = UnixName] && exit 2
[${os}Name = UnixName] && exit 3
a) 0 b) 1 c) 2 **d) 3**

8. What is the output of the following program?
x = 3; y = 5; z = 10;
if [($x -eq 3) -a ($y -eq 5 -o $z -eq 10)]
then
echo $x
else
echo $y
fi
a) 1 **b) 3** c) 5 d) Error

9. What is the output of the following program? [
-n $HOME] echo $? [-z $HOME] echo $? **a) 0**
1
b) 1
0
c) 0
0
d) 1
1

10. What is the output of the following program?
b = [-n $b
] echo $?
[-z $b]
echo $? a)
1
1
b) 2
2
c) 0
0
d) 0
1

11. The expression expr -9 % 2 evaluates to:
a) 0 b) 1 **c) -1** d) 2

12. The statement z = 'expr 5 / 2' would store which of the following values in z?
a) 0 b) 1 **c) 2** d) 2.5 e) 3

13. To feed standard output of one command to standard input of another in a single shell session
a) IO redirection can be used

b) Named pipes can be used
c) The pipe operator provided by the shell can be used
d) It can not be done

14. Which of the following commands allows definition and assignment of environment variables under bash
a) env b) export c) environ d) setenviron

15. While executing a command, the shell
a) Executes it in the same process (as shell)
b) Creates a child shell to execute it
c) Loads a special program to take care of the execution
d) None of the above

16. Which variable contains current shell process id
a) $* b) $? **c) $$** d) $!

17. Which command is used to debug a shell script program
a) set **b) set -x** c) debug d) db

18. For every successful login, which script will be executed?
a) /etc/inittab **b) /etc/profile** c) /etc/login d) /etc/init

19. Hidden files are
a) Those whose 'read' bit is set to 'h'
b) Permitted for (can be accessed) only superusers
c) Files that begin with a '.'
d) Files that cannot be opened by ordinary user for writing

20. Shell is ?
a) Command Interpreter
b) Interface between Kernel and Hardware
c) Interface between user and applications
d) Command Compiler

21. If a file with execute permissions set, but with unknown file format is executed
a) The file is passed to /bin/sh
b) The system returns an error
c) The current shell will try to execute it
d) None of the mentioned

22. Which of the following is true?
a) Shell is a process and can be started by superuser only
b) Shell is a built-in Kernel functionality
c) Shell is a wrapper for all the commands and utilities
d) None of the mentioned

23. Which is true with regards to the shell prompt
a) It can be accidentally erased with backspace
b) The prompt cannot be modified
c) The prompt can be customized (modified)
d) None of the mentioned

24. What is a shell in UNIX?
a) a program through which users can issue commands to UNIX
b) a window management system
c) the login screen
d) the thing that rides on the back of a turtle in UNIX

25. Which of the following represents an absolute path?
a) ../home/file.txt b) bin/cat c) cs2204/ **d) /usr/bin/cat**

26. The user bhojas logged in and performed the following sequence of command. What will be the output of the last command?
$ cd project/module1
$ pwd
a) /home/bhojas/project/module1 b) /home/project/module1
c) /usr/bhojas/project/module1 d) project/module1

27. BASH shell stands for?
a) Bourne-again Shell b) Basic Access Shell
c) Basic to Advanced Shell d) Big & Advanced Shell

28. Which of the following files will not be displayed by the command cat re* ?
a) reminder b) receipt **c) Receipt** d) recipe-cake

29. The redirection 2> abc implies
a) Write file 2 to file abc b) Write standard output to abc
c) Write standard error to abc d) none of the mentioned

30. cmd 2>&1 > abc will
a) Write file2 to file1
b) Write standard output and standard error to abc
c) Write standard error to abc
d) Write standard output to abc & standard error to monitor

31. cmd > abc 2>&1 will
a) Write file2 to file1
b) Write standard output and standard error to abc
c) Write standard error to abc
d) Write standard output to abc & standard error to monitor

32. Which of these is the correct method for appending "foo" in /tmp/bar file?

a) echo foo > /tmp/bar
b) echo foo >> /tmp/bar
c) echo foo | /tmp/var
d) /tmp/bar < echo foo

33. Syntax to suppress the display of command error to monitor?
a) command > &2
b) command 2> &1
c) command 2> &2
d) command 2> /dev/null

34. The following commands gives the output like this
#cat file1 file2
#cat: file1: No such file or directory
hello
If we execute the command "cat file1 file2 1>2 2>&1" the output would be
a) cat: file1: No such file or directory hello
b) No output is displayed
c) Cat: 1>2: No such file or directory
d) hello

35. cat < file1 >> file2 | file3
a) file1 content will be appended to file2 and finally stored in file3
b) file1 content will be appended to file2 and file3 will be ignored
c) file2 and file3 will have same content
d) syntax error

36. Executing cat /etc/password > /dev/sda as superuser will
a) Write data into a regular file called /dev/sda
b) Write data to the physical device sda
c) Create a temporary file /dev/sda and write data to it
d) None of the above

37. From where would the read statement read if the following statements were executed?
exec < file1 exec
< file2 exec <
file3 read line
a) It would read all the files
b) It would not read any files
c) It would read all the files in reverse order
d) It would read only file3

38. The $ variables in a shell script context designates
a) The runtime of the script
b) Number of command line arguments
c) PID of the shell running the script
d) The exit status of the shell script

39. Which variable is used to display number of arguments specified in command line
a) $0
b) $#
c) $*
d) $?

40. Which variable contains last background job process id
a) $* b) $? c) $$ **d) $!**

41. Which command can be used to test various file attributes
a) if b) file **c) test** d) type

42. * Specifies
a) one or more character **b) zero or more charecter**
c) nothing d) None of the above

43.? Specifies
a) one or more character b) zero or more charecter
c) one character d) None of the above

44. Which of the following file set in the current directory are identified by the regular expression a?b*
a) afcc, aabb **b) aabb, axbc** c) abbb, abxy d) abcd, axbb

45. What command would send the output of cmd1 to the input of cmd2?
a) cmd1 | cmd2 b) cmd1 || cmd2 c) cmd1 && cmd2
d) cmd1 ; cmd2 e) cmd1 cmd2

46. What is the output of the following command for bash shell:
echo linux $0
a) linux echo b) linux linux **c) linux bash** d) linux

47. Which variable will display the list of the positional parameters?
a) $# **b) $*** c) $? d) $$

48. Which option of grep displays the line number as well?
a) -v b) -l **c) -n** d) -E

49. How can you search for blank line in a file?
a) $ grep " " file b) $ grep "^$" file
c) $ grep [" "] file **d) $ grep [^$] file**

50. Assuming the files fileA, fileB, fileAB, fileBC and fileABC, exist in a directory, which files match with the pattern file[ABC]?
a) fileA, fileB and fileABC b) fileABC
c) fileA and fileB d) fileAB, fileBC and fileABC

51. What will be printed for the command below?
$ grep –c "^echo" abc
a) The count of lines that do not contain the pattern echo in file abc
b) The count of lines which begin with the pattern echo in file abc
c) The count of lines that ends with the pattern echo in file abc

d) None of the above

52. Which one is used to select only one copy of the repeated lines?
a) uniq -u b) uniq -d c) uniq -c d) uniq –I

53. Indicate the right option to search for BOB, Bob, BOb or BoB?
a) grep –i Bob files **b) grep 'B[oO][bB]' files**
c) grep '[BOB]' files d) grep -v 'Bob' files

54. Indicate the right option to search for anything not a letter or number
a) grep '^[a-zA-Z0-9]' **b) grep '[^a-zA-Z0-9]'**
c) grep '[a-zA-Z0-9]' d) None of the above

55. How do you remove duplicate lines from the file foo using uniq?
a) sort foo | uniq –u b) sort -u foo | uniq -d
c) sort foo | uniq –c d) sort foo | uniq –I

56. One of the entry of /etc/passwd file is shown below:
user1:x:1111:2222:Sanfoundry:/home/user1:/bin/bash
Which among the following will print userid and home dir in the following pattern "user1:/home/user1"
a) awk `{print $1 ":" $6}` /etc/passwd b) awk `{print $1 ":" $7}` /etc/passwd
c) awk `{print $2 ":" $6}` /etc/passwd d) awk `{print $2 ":" $7}` /etc/passwd

57. who | cut –d " " -f1 what is the ouput if the who
command displays like this user1 tty 0 1234
a) user1 b) user1 tty 0 1234 c) tty d) tty 0 1234

58. What is the command that can print lines of first file matching with second file? a)
printline
b) cmp
c) com
d) comm

60. When the return value of any function is not specified within the function, what function returns?
a) nothing
b) exit status of the last command executed c)
0
d) none of the mentioned

61. Parameters can be passed to a function
a) by using the parameter variables $1, $2, $3…….
b) by using the environment variables
c) both (a) and (b)
d) none of the mentioned

62. Which of the following command provides the list of the functions defined in the login session?
a) declare -f b) declare -F **c) both (a) and (b)** d) none of the mentioned
Explanation: 'declare -F' provides just the name of the functions and 'declare -f' provides their definitions also.

63. The keyword 'local' is used
a) to define a variable within a function for its local scope
b) to redefine any global variable
c) this is not a valid keyword
d) none of the mentioned

64. Functions improves the shell's programmability significantly, because
a) when we invoke a function, it is already in the shell's memory, therefore a function runs faster than seperate scripts
b) function provides a piece of code for repetative tasks
c) both (a) and (b)
d) none of the mentioned

65. What is the output of this program?

```
#!/bin/sh      var="Sanfoundry"
san_function() {       var="Linux"
      echo $var
  }
  san_function
exit 0
```

a) Sanfoundry **b) Linux** c) command not found d) none of the mentioned
Explanation: If local variable name is same as the global variable, it overlays the variable, but only within the function.
Output: root@ubuntu:/home/sanfoundry#
./test.sh Linux
root@ubuntu:/home/sanfoundry#

66. What is the output of this program?

```
#!/bin/sh    san_function() {       echo
"Welcome to the Sanfoundry"
      printf "World of Linux\n"
  }
  unset -f san_function
  san_function
exit 0
```

a) Welcome to the Sanfoundry
b) World of Linux
c) both (a) and (b)
d) nothing will print
Explanation: Function definition was deleted before calling the function. command 'unset -f function_name' deletes the function definition.
Output: root@ubuntu:/home/sanfoundry#
./test.sh ./test.sh: 6: san_function: not found

root@ubuntu:/home/sanfoundry#

67. What is the output of this program?

```
#!/bin/bash
  function san_function1 {
     echo "This is first function"
  }
  san_function2() {       echo "This
is second function"
  }
  san_function1
san_function2    exit
0
```

a) This is the first function
b) This is the second function
c) This is the first function This is the second function
d) program will generate error because first function definition is not correct
Explanation: In bash shell, functions can be defined in both the ways, used in the script.
Output: root@ubuntu:/home/sanfoundry#
./test.sh
This is first function
This is second function root@ubuntu:/home/sanfoundry#

68. What is the output of this program?

```
#!/bin/sh
  echo "Just call the function"
san_function    san_function() {
     echo "This is a function"
  }
  exit 0
```

a) only first string will print without any error
b) only second string will print without any error
c) both strings will print
d) none of the mentioned
Explanation: Function must be defined prior to call. Hence only first string will print and program will generate an error also.
Output:
root@ubuntu:/home/sanfoundry# ./test.sh
Just call the function
./test.sh: 3: san_function: not found
root@ubuntu:/home/sanfoundry#

69. What is the output of this program?

```
#!/bin/sh    san_function1() {       a=5
echo "This is the first function"
san_function2
```

```
  }
  san_function2() {       echo "This is
the second function"
san_function3
  }
  san_function3() {       echo "This is
the third function"
  }
  san_function1
exit 0
```

a) This is the first function This is the second function This is the third function

b) This is the first function This is the third function This is the second function

c) This is the second function This is the first function This is the third function

d) This is the third function This is the first function This is the second function

Output: root@ubuntu:/home/sanfoundry# ./test.sh
This is the first function
This is the second function This is the third function
root@ubuntu:/home/sanfoundry#

70. In the shell, by default, all variables are considered and stored as
a) string b) integer c) character d) float

71. Which command reads user input from the terminal and assign this value to a variable name?
a) read b) get c) declare d) set

72. Which one of the following statement is true about variables in shell?
a) variables do not require declaration before assigning value to them
b) variables are case sensitive
c) to extract the contents of a variable, we have to provide the variable a preceding $
d) all of the mentioned

73. Which one of the following is not a valid shell variable?
a) _san b) san_2 c) _san_2 **d) 2_san**
Explanation:The shell variable can contain only letters(a to z or A to Z), numbers(0 to 9), or a underscore character(_) and a variable can not start with a number.

74. To redefine a variable, it can be removed from the list of variables by using the command

a) unset b) delete c) remove d) clear

75. What is the output of this program?
#!/bin/bash san_var="Sanfoundry"
echo "$san_var" echo '$san_var'
echo '"$san_var"' echo "'$san_var'"
echo \$san_var
exit 0
a) Sanfoundry
$san_var "$san_var" 'Sanfoundry' $san_var
b) Sanfoundry Sanfoundry
"Sanfoundry"
'Sanfoundry'
Sanfoundry
c) program will generate an error message
d) program will print nothing
Explanation: Using double quotes does not affect the substitution of the variable, while single quotes and backslash do.
Output: root@ubuntu:/home/sanfoundry#
./test.sh
Sanfoundry
$san_var
"$san_var"
'Sanfoundry' $san_var
root@ubuntu:/home/sanfoundry#

76. What is the output of this program?
#!/bin/bash var1=10 $var1=20 echo
$var1 exit 0
a) program will print 10
b) program will generate a warning message
c) program will print 20
d) both (a) and (b)
Explanation: The doller sign ($) is used to access a variable's value, not to define it.
Output:
root@ubuntu:/home/sanfoundry# ./test.sh ./test.sh:
line 3: 10=20: command not found
10
root@ubuntu:/home/sanfoundry#

77. What is the output of this program?
#!/bin/bash var[1]=san_1
var[2]=san_2 var[3]=san_3 echo
${var[*]} exit 0
a) san_1
b) san_2
c) san_3

d) san_1 san_2 san_3

Explanation:All items of an array can be accessed by using ${[*]} or ${[@]}.

Output: root@ubuntu:/home/sanfoundry#
./test.sh san_1 san_2 san_3
root@ubuntu:/home/sanfoundry#

78. What is the output of this program?
#!/bin/bash san_var=hello readonly
san_var san_var=hi echo $san_var
exit 0

a) hello b) hi c) nothing will print d) none of the mentioned

Explanation:After the execution of the 'readonly' command, shell will not provide the permission to overwrite the value stored in variable 'san_var'.

Output:
root@ubuntu:/home/sanfoundry# ./test.sh
./test.sh: line 4: san_var: readonly variable hello
root@ubuntu:/home/sanfoundry#

79. What is the output of this program?
#!/bin/bash san_var=10 echo "the value
of \"san_var\" is $san_var" exit 0

a) the value of "san_var" is 10
b) the value of is 10
c) the value of san_var is $san_var
d) the value of "san_var" is $san_var **Output:** root@ubuntu:/home/sanfoundry# ./test.sh
the value of "san_var" is 10
root@ubuntu:/home/sanfoundry#

80. Which built-in command performs integer arithmetic in bash shell?

a) let b) get c) set d) none of the mentioned

81. Which expression use the value of the enclosed arithmetic expression?

a) $(()) b) $() c) ${} d) $[]

82. If a and b are 2 variables then the meaning of a<<=b is

a) b = a << b **b) a = a << b** c) b = b << a d) a = a << b

83. Which one of the following is bitwise 'exclusive or' operator?

a) ^= b) |= c) != d) none of the mentioned

84. Which one of the following is not a valid operator in bash shell?

a) || b) ~ **c) =<<** d) -=

85. What is the output of this program?
#!/bin/bash a=2 b=4 let c=a**b
echo $c exit 0

a) 8 **b) 16** c) 32 d) none of the mentioned

*Explanation:'**' is the exponentation operator in bash shell.*

Output: root@ubuntu:/home/sanfoundry#./test.sh
16
root@ubuntu:/home/sanfoundry#

86. What is the output of this program?

```
#!/bin/bash    a=10; b=20    c=$((++a))
let a=c+a    echo $a
  exit 0
```

a) 21
b) 22
c) program will generate an error message
d) none of the above **Output:**

```
   root@ubuntu:/home/sanfoundry#./test.s
   h
22
root@ubuntu:/home/sanfoundry#
```

87. What is the output of this program?

```
#!/bin/bash    a=10    b=$((
$a<0?10:$a<100 ))
  echo $b
  exit 0
```

a) 10 b) 20 **c) 1** d) 0

Explanation:Firstly the '$a<0' condition has been checked. Because it is false hence the right hand side condition of the colon (:) has been checked and this is true so program output is 1.

Output: root@ubuntu:/home/sanfoundry#
./test.sh
1
root@ubuntu:/home/sanfoundry#

88. What is the output of this program?

```
#!/bin/bash    a=10    b=$((
$a<0&&$a<100 ))
  echo $b
  exit 0
```

a) 10 **b) 0** c) 1 d) none of the mentioned

Explanation:The condition '$a<0' is false so logical and operator provides the output 0.

Output: root@ubuntu:/home/sanfoundry#
./test.sh
0
root@ubuntu:/home/sanfoundry#

89. What is the output of this program?

```
#!/bin/bash     a=1; b=2; c=3     d=$((
++a**b*c++ + a ))     echo $d
```

exit 0

a) 14

b) 12

c) program will generate an error message

d) none of the mentioned

*Explanation:The operators in decreasing order of precedence are ++, **, *, +.*

Output: root@ubuntu:/home/sanfoundry#
./test.sh
14
root@ubuntu:/home/sanfoundry#

80. How To Get Input From The Terminal For Shell Script?

a) 'input' command **b) 'read' command**
c) 'scan' command d) None of these

81. Select the statements which assert the differences between soft and hard links?

a) Soft links are links to the file name while hard links are links to the inode of the file.

b) Soft links can reside on different file system while hard links have to be on the same file system as that of the file.

c) Soft links are links to the inode of the file while hard links are links to the file name.

d) None

82. How to remove array element with id 3?

a) unset array[2] **b) unset array[3]** c) remove array[2] d) remove array[1]

83. How can you find out how long the system has been running?

a) Command "time" b) None **c) Command "uptime"** d) Command "datetime"

84. How To Debug A Shell Script?

a) sh -nv testscript.sh b) sh -d testscript.sh c) None **d) sh -x testscript.sh**

85. What is the difference between $$ and $!?

a) $$ gives the process id of the currently executing process whereas $! shows the process id of the process that recently went into background.

b) None

c) $$ gives the last error code of the currently executing process whereas $! returns the exit code of the process that recently went into background.

d) $$ gives the no. of arguments of the currently executing process whereas $! holds the list of arguments of the process that recently went into background.

86. Select the correct ways to perform arithmetic operation in a shell script?

a) Using 'expr' command. Example: expr 7 + 3

b) Using 'eval' command. Example: eval 3 + 6

c) Using a dollar sign and square brackets. Example: test=$[12 + 3]

d) None

87. How to define array in shell script?
a) array=("Hello" "We" "are" "TechBeamers") b) array="Hello","We" "are","TechBeamers"
c) array=["Hello" "We" "are" "TechBeamers"] **d) array={"Hello" "We" "are" "TechBeamers"}**

88. What Is The Correct Comparison Statement In Linux Shell Scripting?
a) if [$x -gt $y] b) if $x -gt $y c) if ($x -gt $y) d) None

89. How to display the first element of an array?
a) echo ${array[0]} b) echo array[1] c) echo ${array[1]} d) echo array[0]

90. Select the correct types of shells available on a typical linux operating system?
a) B shell b) C shell c) Bash d) tcsh e) K shell f) Zsh

91. How to connect to a remote server and execute some commands?
a) Using ftp **b) Using telnet** **c) Using ssh** d) Using scp

92. What Are The Redirect Options To Use For Sending Both Standard Output And Standard Error To The Same Location?
a) &> b) 2 >& **c) 2>&1** d) 2 &>

93. What are different ways to copy files from one machine to other?
a) xcopy b) rsync c) scp d) ftp

94. Which block contains information about the file system like size of file system, block size?
a) inode b) data block c) boot block d) super block

95. What is the outcome of a program running a command using exec?
a) None
b) Command will execute in the current shell without creating any new process.
c) Command will get launched as a daemon process.
d) Command will get executed in a new shell.

96. What is the use of $# in shell scripting?
a) None
b) Count of the arguments passed to a shell script.
c) Error code of the command last executed.
d) Exit code of the shell script.

97. What Is The Use Of "$?" Sign In Shell Script?a
a) None
b) Check whether previous command is executed successfully or not.
c) Print the name of the shell.
d) No. of arguments to a shell script.

98. How to add new array element with id 99?
a) array[98]="New_element" b) set array[99]="New_element"

c) None **d) array[99]="New_element"**

99. How to display all array indexes at once?
a) echo ${array[*]} b) echo ${array[@]}
c) echo ${!array[@]} d) None

100. How to display all array elements at once?
a) echo ${array[@]} b) echo array **c) echo ${array[*]}** d) echo ${array}

101. Which block is not the fundamental component of Linux file system?
a) inode block **b) disk block** c) super block d) boot block e) data block

102. How To Define Functions In Shell Scripting?
a) Begin function test Commands End;
b) int function test(){ Commands return result; }
c) function test(){ Commands }
d) test(){ Commands return $TRUE }

103. Which block contains the program called "Master Boot record" (MBR)?
a) data block **b) None** c) super block d) inode block

104. Select The Statements Which Represent The Use Of "#!/Bin/Bash"?
a) None
b) #!/bin/bash is the first of a shell script.
c) It is known as shebang.
d) It shows that command to be executed via /bin/bash.

105. What is the file descriptor number which represents the STDOUT?
a) 0 **b) 1** c) 2 d) None of the above.

106. Which shell variable holds the first command line argument for a shell script?
a) $0 **b) $1** c) #0 d) None of the above

107. Choose the command to list only the file "error.txt"
a) ls *err*.txt b) ls e*.txt c) ls error.??? **d) ls error.txt**

108. Choose option to list files by modification time.
a) ls –mt **b) ls –t** c) ls –a d) ls –l

109. Which command can be used to query for terminal type being in use?
a) ps b) ls c) whoami **d) tty**

110. Which of the following is called as here document?
a) < **b) <<** c) > d) >>

110. Following is the utility program to perform complex mathematical computation.

a) expr b) bc c) cal d) calci

111. What are the options used to list the contents of a .tar file?
a) cvf b) tvf c) xvf d) lvf

112. What is the output of the command 'umask –S'?
a) Shows mask value using symbolic notion.
b) Shows mask value using octal values
c) Removes the current mask value
d) Set new mask value

113. Choose the example for block special file
a) DVD-ROM b) Serial modem c) Console terminal d) Virtual terminal

Startup and Shutdown

1. Which of the following is not a valid run-level
a) S b) 0 **c) 8** d) 1

2. On Linux, initrd is a file
a) containing root file-system required during bootup
b) Contains only scripts to be executed during bootup
c) Contains root-file system and drivers required to be preloaded during bootup
d) None of the above

3. Which is loaded into memory when system is booted?
a) Kernel b) Shell c) Commands d) Script

4. The process of starting up a computer is known as
a) Boot Loading b) Boot Record **c) Boot Strapping** d) Booting

5. Bootstrapping is also known as
a) Quick boot **b) Cold boot** c) Hot boot d) Fast boot

6. The shell used for Single user mode shell is:
a) bash b) Csh **c) ksh** d) sh

7. Single user mode shell runs as
a) Admin user **b) Root user** c) normal user d) Log user

8. Which is the only partition mounted in Single user mode
a) boot b) usr **c) root** d) tmp

9. Which daemon manages the physical memory by moving process from physical memory to swap space when more physical memory is needed.
a) Sched daemon **b) Swap daemon** c) Init daemon d) Process daemon

10. At the end of kernel bootstrap, which process is started?
a) /etc/init b) /etc/sched c) /etc/swap d) /etc/kernel

11. The process id of init process is:
a) -1 b) 0 **c) 1** d) 2

12. Which file is read by init to get the default runlevel
a) /etc/profile b) /etc/init c) /etc/boot **d) /etc/inittab**

User Account Management

1. User's Primary Group id is listed in which file, at the time of creation of the user (On a standard Unix system)
a) /etc/passwd b) /etc/groups c) /etc/login d) /etc/profile

2. The encrypted password of a user is stored in
a) /etc/shadow b) /etc/enpasswwd c) /etc/.passwd **d) /etc/passwd**

3. A user can change the default log-in shell using
a) chmod **b) chsh** c) rmsh d) tchsh

4. Which of the following identifiers associated with a process decide its privilege level
a) uid b) suid **c) euid** d) gid

5. The /etc/passwd file doesn't contain
a) userid b) home directory for a user
c) login shell name d) None of the above

6. User id 0 is
a) An innvalid user id
b) The id of the root user
c) The id of a user when the user's account is deleted
d) None of the above

7. The login shell is
a) The shell program that runs when the user logs in
b) The shell program that authenticates the user while logging in
c) Common shell for all the users that belong to the same group
d) None of the above

8. Which of the following command can be used to change the user password?
a) User can't change the password
b) passwd
c) passd
d) pwd

9. What does the following command do ?
who | wc –l
a) List the number of users logged in
b) List the users
c) List the number of users in the system
d) Display the content of who command

10. By default, a Linux user falls under which group?
a) staff
b) others
c) same as userid (UPG)
d) system

11. Which of the following files need to be referred for user's secondary group?
a) /etc/passwd b) /etc/shadow
c) /etc/group d) /etc/profile

12. The ls –l output for /etc/passwd and /usr/bin/passwd is as follows:
-rw-rw-r-- 1 root root 2807 Apr 26 13:50 /etc/passwd
-r-s—x—x 1 root root 17008 May 25 02:30 /usr/bin/passwd

If a user, not belonging to the group 'root', runs the passwd executable in an attempt to modify his password, then which of the following is true?
a) password change fails since user does not have permission to update /etc/passwd file
b) password change is successful because the program runs as root
c) passwd change program runs in kernel mode where write access to the /etc/passwd file is possible
d) /etc/passwd is a special file and the system by default allows all users to update it

Vi Editor

1. Which one of the following statement is not true?
a) vim editor is the improved version of vi editor
b) vi editor commands are not case sensitive
c) vi editor has two modes of operation: command mode and insert mode d)
vi stands for visual editor

2. Which command is used to close the vi editor?
a) q b) wq **c) both (a) and (b)** d) none of the mentioned
Explanation: The command 'q' just closes the file and 'wq' saves and closes the file.

3. In vi editor, the key combination CTRL+f
a) moves screen down one page
b) moves screen up one page
c) moves screen up one line
d) moves screen down one line

4. Which vi editor command copies the current line of the file?
a) yy b) yw c) yc d) none of the mentioned
Explanation: The command 'p' puts the copied text after the cursor.

5. Which command is used to delete the character before the cursor location in vi editor?
a) X b) x c) D d) d
Explanation: The command 'x' is used to delete the character under the cursor locarion.

6. Which one of the following statement is true?
a) autoindentation is not possible in vi editor
b) autoindentation can be set using the command ':set ai'
c) autoindentation can be set using the command ':set noai'
d) autoindentation is set by default in vi editor

7. Which command searches the string in file opened in vi editor?
a) / or ? b) f or F c) t or T d) none of the mentioned
Explanation: The command '/' searches downward in the file and command '?' searches upward in the file.

8. In vi editor, which command reads the content of another file?
a) read b) r **c) ex** d) none of the mentioned

9. Which command shows all the abbreviations in vi editor?
a) ab b) abb c) show d) none of the mentioned

10. Which command sets the number for all lines?
a) :set li b) :set ln **c) :set nu** **d)** :set nl

Extra MCQ

1. Which option of grep command used to display byte offset of pattern match?
A. –o B.–b C.–i D.None of the above

2. Shell is _____ .
A. Command Interpreter
B. Interface between Kernel and Hardware
C. **Command Compiler**
D. All of the above

3. command "ln -s" can used to create a _____.
A. locate file B. symbolic link file C. hardlink file D. None of the above

4. _____ is octal number to represent set user id.

A. 2 B. 4 C. 1 D.All of the above

5. For every successful login, which script will be executed?
A. /etc/inittab B. /etc/profile C. /etc/login D. /etc/init

6. Which command is used to show process hierarchy in tree format?
A. ps –tree B. pstree C. ps –t D. None of these

7. Which of the following command kill all the process including shell ?
A. kill kill 0 B. kill -9 kill 0 C. kill -s kill 0 D. Both B and C

8. What is the maximum file name length in EX2 file system in Linux?
A. 128 B. 256 C. 255 D. 1024

9. How do you copy an entire directory structure? E.g. from cdac to cdac.backup
A. Cp -r cdac to cdac.backup B. Cp -e cdac to cdac.backup
C. Cp -d cdac to cdac.backup D. Cp -s cdac to cdac.backup

10. Which command reads user input from the terminal and assign this value to a variable name? A. **Read** B. get C. declare D. set

11. In the shell, by default, all variables are considered and stored as
A. **string** B. integer C. character D. float

12. Which one of the following statement is true about variables in shell?
A. variables do not require declaration before assigning value to them
B. variables are case sensitive
C. to extract the contents of a variable, we have to provide the variable a preceding $
D. all of the mentioned

13. Which one of the following is not a valid shell variable?
A. _san B. san_2 C. _san_2 D. 2_san
Explanation: The shell variable can contain only letters(a to z or A to Z), numbers(0 to 9), or a underscore character(_) and a variable can not start with a number.

14. To redefine a variable, it can be removed from the list of variables by using the command
A. **unset** B. delete C. remove D. clear

15. What is the output of this program?

```
#!/bin/bash    var1=10    $var1=20
  echo $var1
exit 0
```

A. program will print 10
B. program will generate a warning message
C. program will print 20

D. program will print 10 & 20

16. Which built-in command performs integer arithmetic in bash shell?
A. let B. get C. set D. none of the mentioned

17. Which expression use the value of the enclosed arithmetic expression?
A. $(()) B. $() C. ${} D. $[].

18. If a and b are 2 variables then the meaning of a<<=b is
A. b = a << b B. a = a << b C. b = b << a D. a = a << b

19. Which one of the following is bitwise 'exclusive or' operator?
A. ^= B. |= C. != D. none of the mentioned

20. Which one of the following is not a valid operator in bash shell?
A. || B. ~ C. =<< D. -=

21. What is the output of this program?
#!/bin/bash a=1; b=2; c=3 d=$((
++a**b*c++ + a)) echo $d
exit 0 **a)**
14
b) 12
c) program will generate an error message
d) none of the mentioned

22. What is the output of this program?
#!/bin/bash a=10
b=$(($a<0&&$a<100))
echo $b
exit 0
a) 10 **b) 0** c) 1 d) none of the mentioned

23. What is the output of this program?
#!/bin/bash a=10; b=20 c=$((++a))
let a=c+a echo $a
exit 0
a) 21
b) 22
c) program will generate an error message
d) none of the mentioned

24. What is the output of this program?
#!/bin/bash
a=2 b=4
let c=a**b

echo $c
exit 0

A. 8 **B. 16** C. 32 D. none of the mentioned

25. To feed standard output of one command to standard input of another in a single shell session
A. IO redirection can be used
B. Named pipes can be used
C. The pipe operator provided by the shell can be used
D. It can not be done

26. Which of the following commands allows definition and assignment of environment variables under bash **A. env** B. export C. environ D. setenviron

27. While executing a command, the shell
A. Executes it in the same process (as shell)
B. Creates a child shell to execute it
C. Loads a special program to take care of the execution
D. None of the mentioned

28. Which variable contains current shell process id
A. $* B. $? C. $$ D. $!

29. Which command is used to debug a shell script program
A. set **B. set -x** C. debug D. db

30. Hidden files are
A. Those whose 'read' bit is set to 'h'
B. Permitted for (can be accessed) only superusers
C. Files that begin with a '.'
D. Files that cannot be opened by ordinary user for writing

31. In Linux which of following command do you use to know the purpose of a command?
A. which **B. whatis** C. what D. purpose

32. Which of the following is the BEST way to set up SSH(Secure Shell) for communication between Systems without needing passwords?
a) Use ssh-keygen for generating public-private keys.
b) Disable passwords on specific accounts that will use SSH.
c) Both A and B
d) None of the above

33. How much usable space is available, when a Linux system is configured with a RAID 5 array that consists of six 20 GB hard disk drives?
a) 80 **b) 100** c) 120 d) 60

33. Which of the following commands can be used to check for file corruption?

a) md5sum b) checkfile c) cat –vet d) tar --checksum

34. Which of the following allows to secure remote command line access?
a) telnet b) SSL **c) SSH(Secure Shell)** d) Rlogin

35. Which of the following supports for creating a Linux VPN (Virtual Private Network)?
a) RC2 **b) 3DES** c) chap d) NTLMv2

36. Which of the following commands delete the files from the /tmp directory, issued by non-root user?
a) rmdir -rf /tmp/* b) rm -rf /tmp/* -su
c) su -c "rm -rf /tmp/*" d) su "rm -rf /tmp/*"

37. Which configuration does cardmgr read at Linux system startup?
a) PCMCIA cards b) PCI cards c) USB cards d) SCSI cards

38. When a computer system is reported problems with inodes and blocks, which of the following is the problem and its solution to rectify it?
a) The file system has become corrupt and needs to be repaired.
b) The boot sector is corrupt and needs to be repaired.
c) The drive is configured using an improper file system and needs to be reformatted.
d) The partition table has become corrupt and needs to be replaced.

39. Which Linux command will successfully mounts a USB drive?
a) mount /dev/uda1 /mnt/usb **b) mount /dev/sda1 /mnt/usb**
c) mount -t usbfs /dev/usb001 /mnt/usb d) mount /dev/hde1 /mnt/usb

40. _____ is a common tool for determining services and ports running on a remote Linux.
a) arp **b) nmap** c) netstat d) None of the above

41. For supporting new diskless client workstations, which of the following services needs to be installed on a server?
a) dhcpcd and rexec b) named and httpd
c) remoted and dhcpd **d) PXE (Preboot eXecution Environment) and tftpd**

42. In your shell script you define x = 20,the whatis the value of xx?
a) undefined b) x20$ **c) erroneous** d) 200

43. In Linux How we can check previous comma nd run successful or not?
a) $? b) $0 c) $11 d) $&

44. Whatis the right output or following shell script?

```
for i in {0..100..3);
do echo $i;
 done
```

a) Output is 0 3 9 18……99 b) Output is 0 12 3……99
c) Output is 0 3 69……. 99 d) None of the above

45. Which Linux run levelis full multiuser mode without GNOME GUI manager?
a) Runlevel 1 **b) Runlevel 3** c) Runlevel 2 d) Runlevel 0

46. When you monitoring your Linux server you realize your server GUI is consuming high amount of RAM and CPU then you want to change default run level. Please select file below which allow you to change default run level.
a) /etc/inittab b) /etc/init.d c) /etc/inittabd d) /etc/fstab

47. Which Linux file contains the default environment variable for the bash shell
a) -/.profile b) /bash **c) ./etc/profile** d) -/bash

48. What is the right statement to add two integers x and y
a) Sum='expr $x +$y' b) Sum=Sx + $y c) Sum='expr $x + Sv' d) Sum='Sx + Sy'

49. For a specific Linux directory,you want to rename allthe files with new extension whichof the followingscript Is right to do.
a) dir•/home/cdac/data for file in ' s $dir/"
do
ren $file $file.new
done

b) d1r•/home/cdoc/data for me 1n 'Is Sdlrr·
do
mv $file $file.new
done

c) dlr=/home/cdac/data for fileIn "Is $dlr/"·
do
rename $file $file.new
done

d) dir=/home/cdac/data for file in 'Is $dir/"
do
cp $file $file.new
done

50. You want to copy the /Data directory and all subdirectories from the current system (IP address 192.168.1.9) to the remote system {IP address Is 192.168.1.10)?
a) scp -R /Data 192.168.1.9:/ b) scp ·r /Data root@l92.168.1.10:/
c) rep -R /data 192.168.1.10:/ d) scp ·R root@l92.168.1.10:/ /0ata

51. what does rwx r-x r- mean In Number.
a) 754 b) 742 c) 724 d) 624

52. how do you simulate a command as root.
a) SU root b) sudo root c) sudo root –c **d) SU – root**

53. Current octal value of the permissions on a file is 644,which of the following command change the octal value of the permissions to 755?
a) chmod g+w b) chmod g·s c) chmod a+x d) chmod o+x

54. Whichof the following symbols takes the output from the command and redirectsinto a file as aninput and overwrite on the content of the file?
a) > b) < c) | d) »

55. Which of the following AWS allow you root access?
a) ROS b) DynamoDB c) Elastic Map Reduce (EMR) **d) EC2**

56. Which of the following options characterizes elasticity according to the definition of cloud computing?
a) Identical cloud resources are provisioned in different cloud computing environments.
b) Cloud computing resources can be expanded but never decreased.
c) Cloud capabilities can be scaled rapidly outward and inward according to demand.
d) Cloud resources are doubled after at least 24 hours and the leasing period of a resource can be extended for free.

57. Which of the following statements is false?
a) VM high availability enables the restarting of virtual machines that were running on hosts that failed.
b) Live migration is a disaster recovery feature that allows the migration of VMs after a physical server suffers a major hardware failure.
c) Resource load balancing allows automatic host selection when you are creating a virtual machine.
d) VM fault tolerance reserves double the resources a virtual machine requires.

58. You are looking for a cloud computing which offers a set of basic services such as virtual server provisioning and on-demand storage that can be combined into a platform for deploying and running customized applications. Which of the following cloud computing model is suitable for you?
a) Platform as a Service b) Software as a Service
c)Application as a Service **d) Infrastructure as a Service**

59. Which of the following option is right for business type provides Software as a Service?
a) Application Service Provider b) Internet Service Provider
c) Infrastructure Service Provider d) Platform Service Provider

60. What is the output of the following code?
print(type([1,2]))
A. <class 'tuple'> B. <class 'int'> C. <class 'complex'> D. <class 'list>

61. What gets printed?
print(type(1/2))
A. <class 'int'> B. <class 'number'> C. <class 'float'> D. <class 'tuple'>

62. What gets printed?
d = lambda p:p • 2 t = lambda p:p • 3
x = 2

x "' d(x) x = t(x) x "' d(x) print(x)
A. 7 B. 12 C. 24 D. 36

63. What gets printed?
x = 4.5
y = 2 print(x//y)
A. 2.0 B. 2.25 C. 9.0 D. 20.25

64.What gets printed?
nums = set([1,1,2,3,3,3,4))
print(len(nums))
A 1 B. 2 C. 4 D. 7

65. What gets printed?
counter = 1
def doLotsOfStuff():
global counter
for i in (1,2, 3):
counter += 1
do otsOfStuff()
print(counter)
A. 1 B. 3 C. 4 D. None of the above

66. What gets printed?
class Account:
def _init_(self. id): self.id = id
id = 666
ace = Account(123)
print(ace.id)
A. None B. 123 C. 666 D. SyntaxError, this program will not run

67. Which numbers are printed?
for I in range(2):
print(i)
for I in range(4,6):
print(i)
A. 2,4,6 B. 0,1,2,4,5,6 C. 0,1,4,5 D. 0,1,4,5,6,7,8,9

68. What sequence of numbers is printed?
values = (2,3,2,4)
def my_transformation(num):
return num 2
for iin map(my_transformation, values):
print(i)
A. 2 3 2 4 B. 1 1.5 1 2 C. 1 112 D. 4 9 4 16

69. What gets printed?

x = *cdac*
y = 2
print(x + y)
A. cdac B. cdac cdac C. cdac 2 D. An exception is thrown

70. What gets printed?
mydict ={}
Print(type(mydict))
A. <class 'set'> B. <class 'dict'> C. <class 'list'> D. <class 'tuple'>

71.What gets printed?
myvar = (3,4,5)
print(type(myvar))
A. <class 'int'> B. <class 'list> C. <class 'tuple'> D. <class 'diet'>

72. What gets printed?
myvar = {1:'1', 2:'2', 3}
myvar = {}
print(len(myvar))
A. 0 B. 1 C. 2 D. 3

73. What gets printed?
myvar = {1:'1', 2:'2',3:'3'}
del myvar[1]
myvarf[1] = '10'
del myvar[2]
print(len(myvar))
A. 1 B. 2 C. 3 D. 4

74. What gets printed?
numbers = [1,2,3,4]
numbers.append([5,6,7,8])
print(len(numbers))
A. 4 B. 5 C. 8 D. 12

75.In your shell script you define x = 20,the whatis the value of xx?
A. undefined B. x20$ C. erroneous d. 200

76. Which statement is true for the lifespan of the variable in the shell script?
A. The lifespan of a variable inside shell script is until system On.
B. The lifespan of a variable inside shell script is only until the end of execution.
C. The lifespan of a variable inside shell script is until the terminal is open.
D. None of the above

77. In your Linux system you have added new SATA ha rd disk with 1partition with ext4 filesystem, which of the following right comma nd you will use to mount the
A. mount·t ext4 /dev/hda l /mnt B. mount·t ext4 /dev/sda l/mnt

C. mount -t e.xt4 /dev/sdbl /m nt D. mount -t ext4 /dev/hdbl /m nt

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do
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done

C. dlr=/home/cdac/data for fileIn "Is $dlr/"·
do
rename $file $file.new
done

D. dir=/home/cdac/data for file in 'Is $dir/''
do
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C. rep -R /data 192.168.1.10:/ D. scp ·R root@l92.168.1.10:/ /0ata

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C. Infrastructure Service Provider D. Platform Service Provider

94. What is true about the role of Hyper Threading feature In HPC?

A. Itis used to increase the number of independent instructions in the pipeline.
B. One core appears as two processors to Operating system
C. It allows for more total throughput without replicating much hardware.
D. All of the above.

95..Flynn's taxonomy-based SIMD computer is best utilised in the following applications scenario:
A. A computer program that can play game of strategy such as chess.
B. A computer program used in the rendering of a still image.
C. A computer program used to categorise an object in different classes.
D. A computer program used for displaying train timings on the screen.

96. An algorithm uses Binary Tree Data structure. For adopting a parallel approach, it can use
A. Iterative Data Decomposition
B. Recursive Decomposition
C. Exploratory Decomposition
D. Finer Granularity Decomposition

97. What the nowait clause In the following statement "#pragma omp for nowait" do?
A. Skips to the next OpenMP construct.
B. Prioritizes the following OpenMP construct.
C. Avoid the implied barrier at the end of the for directive.
D. Removes the synchronization barrier from the previous construct.

98. Dependencies in pipelined processors can be due to
A. Structural Dependencies which occur due to resource conflict.
B. Control Dependencies which occur during the transfer of control instructions.
C. Data Dependencies which cause delay in pipeline.
D. All of the above.