What will the following commands do?

1 echo "Hello, World!"
=> echo prints Hello, World!"

2 name="Productive"
=> name is a variable which store Productive

3 touch file.txt
=> create file.txt file

4 ls -a
=> list all hidden files

5 rm file.txt
=> remove file.txt file

6 cp file1.txt file2.txt
=> copy the content of file1.txt in file2.txt

7 mv file.txt /path/to/directory/
=> mv command used to rename file

8 chmod 755 script.sh
=> read , write , execute permission to owner and read and execute permission to group and other

9 grep "pattern" file.txt
=> it search "pattern" word in file.txt

10 kill PID
⇨ To kill process

11 mkdir mydir && cd mydir && touch file.txt && echo "Hello, World!" > file.txt && cat file.txt
=> mkdir create directory
cd cuttent directory
rouch create file.txt
echo will print Hello, World!

> redirection operator put result of echo i.e Hello World! in file.txt
cat shows content inside file.txt

12 ls -l | grep ".txt"
=> give permission to owner read and write and other and group read only

13 cat file1.txt file2.txt | sort | uniq
⇨ Give unique lines from file1 and file 2

14 ls -l | grep "^d"
=> Shows all directories in the current directory

15 grep -r "pattern" /path/to/directory/
=> reverse the patten which we want to search

16 cat file1.txt file2.txt | sort | uniq –d
=> cat concate file1 and file2 and sort into unique

17 chmod 644 file.txt
=> read, write permission to owner and read permission to group and other

18 cp -r source_directory destination_directory
=>' copy source_directory in destination_directory

19 find /path/to/search -name "*.txt"
⇨ Find all .txt files

20 chmod u+x file.txt
=> give execute permmsion to user

21 echo $PATH
=> prints value of PATH variable

Identify True or False:

1. ls is used to list files and directories in a directory.
=> True

2. mv is used to move files and directories.
=>True

3. cd is used to copy files and directories.
=>False

4. pwd stands for "print working directory" and displays the current directory.
=> False

5. grep is used to search for patterns in files.
=>True

6. chmod 755 file.txt gives read, write, and execute permissions to the owner, and read and execute group and others.
=> True

7. mkdir -p directory1/directory2 creates nested directories, creating directory2 inside directory1 if directory1 does not exist.
=> False

8. rm -rf file.txt deletes a file forcefully without confirmation.
=> True

Identify the Incorrect Commands:

1. chmodx is used to change file permissions. => chmodx == chmod

2. cpy is used to copy files and directories.=> cpy == cp

3. mkfile is used to create a new file.=> mkfile == touch/nano

4. catx is used to concatenate files.=> cat

5. rn is used to rename files. => mv

Part C

Question 1: Write a shell script that prints "Hello, World!" to the terminal.

```
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ nano p1
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ bash p1
Hello, World!
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$
```

Question 2: Declare a variable named "name" and assign the value "CDAC Mumbai" to it. Print the value of the variable.

```
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ nano p1
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ bash p1
CDAC MUMBAI
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$
```

Question 3: Write a shell script that takes a number as input from the user and prints it.

```
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ nano p1
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ bash p1
enter number
1000
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$
```

Question 4: Write a shell script that performs addition of two numbers (e.g., 5 and 3) and prints the result.

```
  GNU nano 6.2
x=10
y=20

let $"c=x+y"
echo $c
```

```
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ bash p1
30
```

Question 5: Write a shell script that takes a number as input and prints "Even" if it is even, otherwise prints "Odd".

```
echo "Enter a number:"
read n

if [ `expr $n % 2` == 0 ]
then
        echo "$n is even"
else
        echo "$n is Odd"
fi
```

```
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ bash p1
Enter a number:
45555
45555 is Odd
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$
```

Question 6: Write a shell script that uses a for loop to print numbers from 1 to 5.

```
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ nano p1
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ bash p1
1
2
3
4
5
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$
```

```
  GNU nano 6.2
i=0
for i in 1 2 3 4 5
do
echo $i
done
```

Question 7: Write a shell script that uses a while loop to print numbers from 1 to 5.

```
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ nano p1
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ bash p1
1
2
3
4
5
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$
```

```
i=1
while [ $i -lt 6 ]
do

echo $i
i=`expr $i + 1`

done
```

Question 8: Write a shell script that checks if a file named "file.txt" exists in the current directory. If it does, print "File exists", otherwise, print "File does not exist".

```
cdac@LAPTOP-711BBB8A:~$ pwd
/home/cdac
cdac@LAPTOP-711BBB8A:~$ ls
LinuxAssignment  acess.log  file1.txt  p1  p1.txt  p2  practise  project
cdac@LAPTOP-711BBB8A:~$ nano p2
cdac@LAPTOP-711BBB8A:~$ bash p2
file is not present
cdac@LAPTOP-711BBB8A:~$ cat p2
if [ -f "file.txt" ];
then
echo "file is present"
else
echo "file is not present"
fi
cdac@LAPTOP-711BBB8A:~$
```

Question 9: Write a shell script that uses the if statement to check if a number is greater than 10 and prints a message accordingly.

```
echo "enter number"
read number

if [ $number -gt 10 ]
then
        echo "number is greater than 10"

else
        echo "number is less than 10"

fi
```

```
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ nano p1
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$ bash p1
enter number
456555454
number is greater than 10
cdac@LAPTOP-711BBB8A:~/LinuxAssignment$
```

Question 10: Write a shell script that uses nested for loops to print a multiplication table for numbers from 1 to 5. The output should be formatted nicely, with each row representing a number and each column representing the multiplication result for that number.

```
cdac@LAPTOP-711BBB8A:~$ nano p2
cdac@LAPTOP-711BBB8A:~$ bash p2
   1   2   3   4   5   6   7   8   9  10
   2   4   6   8  10  12  14  16  18  20
   3   6   9  12  15  18  21  24  27  30
   4   8  12  16  20  24  28  32  36  40
   5  10  15  20  25  30  35  40  45  50
cdac@LAPTOP-711BBB8A:~$ cat p2
for i in 1 2 3 4 5
do
for j in 1 2 3 4 5 6 7 8 9 10
do
table=$((i*j))
printf "%4d" $table
done
echo
done
cdac@LAPTOP-711BBB8A:~$
```

Question 11: Write a shell script that uses a while loop to read numbers from the user until the user enters a negative number. For each positive number entered, print its square. Use the break statement to exit the loop when a negative number is entered.

```
cdac@LAPTOP-711BBB8A:~$ nano p2
cdac@LAPTOP-711BBB8A:~$ bash p2
enter any no, if give negative no u are out!
10
square of no is  100
enter any no, if give negative no u are out!
-1
negative no o are out
cdac@LAPTOP-711BBB8A:~$ cat p2
while true
do
echo "enter any no, if give negative no u are out! "
read no

if [ $no -lt 0 ];
then
echo "negative no o are out"
break
fi

square=$((no*no))
echo "square of no is  $square"
done
cdac@LAPTOP-711BBB8A:~$
```