**Part A**

**1. write a python program to accept two number from user and swap 2 number using third variable**

```
a = int(input("enter a first number\n"))
b = int(input("enter a second number\n"))
print("before swapping a = ",a," b = ",b)
temp = a
a = b
b = temp
print("after swapping a = ",a," b = ",b)
```

**2. write a python program to accept 2 integer from user and to perform all arithmetic operation on those two number**

```
a = int(input("enter a first number\n"))
b = int(input("enter a second number\n"))
add = a+b
diff = a-b
mul = a*b
div = a/b
rem = a%b
power = a**b
print("sum of ",a," & ",b," = ",add)
print("difference of ",a," & ",b," = ",diff)
print("multiplication  of ",a," & ",b," = ",mul)
print("division  of ",a," by ",b," = ",div)
print("power  of ",a," & ",b," = ",power)
print("reminder of ",a," & ",b," after division = ",rem)
```

**3. write a python program to accept length & width of rectangle & compute its perimeter and area**

```
l = float(input("enter a length of rectangle\n"))
b = float(input("enter a width of rectangle\n"))
p = 2*(l+b)
a = l*b
print("perimeter of rectangle = ",p)
print("area of rectangle = ",a)
```

**4. write a python program to accept principle amount, rate & time and to calculate simple interest and amount payable**

```
p = float(input("enter a principle amount\n"))
t = float(input("enter time \n"))
r = float(input("enter a rate\n"))
si = (p*t*r)/100
amt_pay = p+si
print("principle amount = ",p)
print("rate of intrest = ",r)
print("time = ",t)
print("simple intrest = ",si)
print("total amount payable = ",amt_pay)
```

**5. write a python program to accept three number and to find largest of three number**

```
a = float(input("enter a first number\n"))
b = float(input("enter a second number\n"))
c = float(input("enter a third number\n"))
large = a
if b > large:
        large = b
if c > large:
        large = c
print("largest of 3 number = ",large)
```

**6. write a python program to take name and age of a person as a input and display a message whether he/she is eligible to apply driving license or not, condition(eligible, if age>=18years)**

```
name = input("enter your name\n")
age = int(input("enter your age\n"))
if age > = 18:
    print(name," you are eligible for apply driving license")
else:
    print(name," you are not eligible for apply driving license")
```

**7. Write a python program to print minimum and maximum of 5 numbers**

```
print("enter 5 number")
numlist = [int(input())for i in range(5)]
largest = smallest = numlist[0]
print("The numbers in list are " ,numlist)
for i in numlist:
        if i < smallest:
                smallest = i
        if i > largest:
                largest = i
print("smallest of 5 number is " ,smallest)
print("largest of 5 number is " ,largest)
```

**8. Write a python program to find the grade of a student, given percentage of marks obtained by user as input. the grade allocated as given in the below.**

| Percentage | Grade |
|---|---|
| >=90% | A |
| 80% to 90% | B |
| 70% to 80% | C |
| 60% to 70% | D |
| Below 60% | E |

```
per = int(input("enter percentage of marks : "))
if(per > = 90):
        print("Grade A")
elif(per > = 80 and per < 90):
        print("Grade B")
elif(per > = 70 and per < 80):
        print("Grade C")
elif(per > = 60 and per < 70):
        print("Grade D")
else:
        print("Grade E")
```

**9. write a python program to print a table of given number**

```
n = int(input("enter a number to print its table\n"))
print("the table of ",n," is")
for i in range(1,11):
    print(n," X ",i," = ",n*i)
```

**10. write a python program to find sum of digit**

```
n = int(input("enter a number\n"))
temp = n
sum = 0
while n > 0:
        rem = n%10
        sum = sum+rem
        n = n//10
print("sum of ",temp," digits = ",sum)
```

**11. write a python program to find whether the number is palindrome or not**

```
n = int(input("enter a number\n"))
oldNo = n
rev = 0
while n > 0:
        rem=n%10
        rev=rev*10+rem
        n=n//10
if(oldNo = = r):
        print(oldNo," is a palindrome number ")
else:
        print(oldNo," is not a palindrome number ")
```

**12.Write a python program to print the following pattern**

**1 2 3 4 5**

**1 2 3 4**

**1 2 3**

**1 2**

**1**

```
for i in range(6):
        for j in range(1, 6-i):
                print(j, end='  ')
        print()
```

**Part - B**

**1. write a program with user defined function to accept name and gender (M for Male and F for Female)and prefix Mr./Ms based on the gender.**

```
def prefix(name, gender):
   if(gender=='m' or gender=='M'):
        print("Hello MR.",name)
   elif(gender=='F' or gender=='f'):
        print("Hello Ms.",name)
   else:
        print("Please enter only F/M in gender!")
name=(input("enter your name\n"))
gender=(input("enter your gender, F for Female and M for Male\n"))
prefix(name, gender)
```

**2.Write a program that has a user defined function to accept the coefficients of a quadratic equation in variables and calculates its discriminant. For example : if the coefficients are stored in the variables a, b, c then calculate discriminant as $b^2 – 4ac$, Write the appropriate condition to check discriminant on positive, zero and negative and output appropriate result.**

```
def discriminant(x,y,z):  #called fn with formal parameter
        disc=y**2-4*x*z
        return disc
print("for a quadratic equation in the form ax^2+bx+c=0")
a=int(input("enter the co efficient of a:"))
b=int(input("enter the co efficient of b:"))
c=int(input("enter the co efficient of c:"))
det=discriminant(a,b,c)   #calling fn with actual parameter
print("the nature of roots : ")
if det==0:
        print("the roots are real and equal")
elif det>0:
        print("the roots are real and distinct")
else:
        print("the roots are imaginary")
```

**3. Write a python program that has a user defined function to accept 2 numbers as parameter, if number 1 is less than number 2 then numbers are swapped and returned otherwise same order is returned**

```
def swap(a,b):
    if(a<b):
        print("since ",a," is less than ",b," swap operation is done")
        return b,a
    else:
        print("since ",a," is greter than ",b,"so it return as it is")
        return a,b
n1 = int(input("Enter Number 1: "))
n2 = int(input("Enter Number 2: "))
print("number1 = ",n1)
print("number2 = ",n2)
n1,n2 = swap(n1, n2)
print("Returned value from function:")
print("number1 = ",n1)
print("number2 = ",n2)
```

**4. Write a program to input line(s) of text from the user until enter is pressed. Count the total number of characters in the text (including white spaces), total number of alphabets, total number of digits, total number of special symbols and total number of words in the given text. (Assume that each word is separated by one space).**

```
userInput = input("Write a sentence: ")
totalChar = len(userInput)
print("Total Characters: ",totalChar)
totalAlpha = totalDigit = totalSpecial = totalSpace = 0
for ch in userInput:
    if ch.isalpha():
        totalAlpha += 1
    elif ch.isdigit():
        totalDigit += 1
    elif ch.isspace():
        totalSpace += 1
    else:
        totalSpecial += 1
print("Total Alphabets: ",totalAlpha)
print("Total Digits: ",totalDigit)
print("Total Special Characters: ",totalSpecial)
print("Total Words in the Input :",(totalSpace + 1))
```

**5. Write a user defined function to convert a string with more than one word into title case string where string is passed as parameter. (Title case means that the first letter of each word is capitalized)**

```
def titlecase(string):
    if string.istitle():
        print("the string is already in title case")
    else:
        print("the input string in title case is :")
        print(string.title())
str1 = input("Write a sentence: ")
titlecase(str1)
```

**6. Write a function that takes a sentence as an input parameter where each word in the sentence is separated by a space. The function should replace each blank with a hyphen and then return the modified sentence.**

```
def hypen(string):
        print("the new string is :")
        print(string.replace(' ','-'))
str1 = input("Write a sentence: ")
hypen(str1)
```

**7. Write a python program to accept list elements and to find the number of times an element occurs in the list**

```
list1 = [ ]
n=int(input("enter the size of list"))
print("enter the elements")
for i in range(0,n):
        ele=int(input())
        list1.append(ele)
print("The list elements is:",list1)
ele = int(input("Which element occurrence would you like to count? "))
count = list1.count(ele)
print("The count of element",ele,"in the list is:",count)
```

**8. Write a function that returns the largest element of the list passed as parameter.**

```
def largestNum(list1):
        lar = max(list1)
        return lar
list1 = [ ]
n=int(input("enter the size of list"))
print("enter the elements")
for i in range(0,n):
        ele=int(input())
        list1.append(ele)
max_num = largestNum(list1)
print("the list elements are ",list1)
print("The largest number of the list:",max_num)
```

**9. Write a program to read a list of elements. Modify this list so that it does not contain any duplicate elements, i.e., all elements occurring multiple times in the list should appear only once.**

```
def removeDup(list1):
        list2=[ ]
        for ch in range(len(list1)):
                if list1[ch] not in list2:
                        list2.append(list1[ch])
        return list2
list1=[ ]
n=int(input("Enter the size of elements"))
print("enter the elements of list")
for i in range(n):
        ele=int(input())
        list1.append(ele)
print("the elements of list are : ",list1)
print("list after removing duplicate elements is ",removeDup(list1))
```

**10. Write a program to read email IDs of n number of students and store them in a tuple. Create two new tuples, one to store only the usernames from the email IDs and second to store domain names from the email IDs. Print all three tuples at the end of the program. [Hint: You may use the function split()]**

```
emails=tuple()
userName=tuple()
domName=tuple()
n=int(input("enter how many students details want to enter : "))
print("enter an email id")
for ch in range(n):
        emid=input()
        emails=emails+(emid,)
        spl=emid.split("@")
        userName=userName+(spl[0],)
        domName=domName+(spl[1],)
print("the email id stored in tuples are")
print(emails)
print("\nthe username in the email id are :")
print(userName)
print("\nthe domain name in email id are :")
print(domName)
```

**11. Write a program to input names of n students and store them in a tuple. Also, input a name from the user and find if this student is present in the tuple or not.**

```
name=tuple()
n=int(input("how many students do you want to enter : "))
print("enter students name :")
for i in range(n):
        nm=input()
        name=name+(nm,)
print("the names stored in tuples are")
print(name)
sname=input("enter a name to search : ")
if sname in name:
        print(sname," is found in tuples")
else:
        print(sname," is not found in tuples")
```

**12. a. Write a Python program to create a dictionary from a string. Note: Track the count of the letters from the string. Sample string : '2nd pu course'.**

**Expected output : {'2': 1, 'n': 1, 'd': 1, ' ': 2, 'p': 1, 'u': 2, 'c': 1, 'o': 1, 'r': 1, 's': 1, 'e': 1}**

```
st = input("Enter a string: ")
dict1={ }
for ch in st:
        if ch in dict1:
                dict1[ch] += 1
        else:
                dict1[ch] = 1
print(dict1)
```

**12. b. Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have marks above 75.**

```
count =int(input("enter the number of students :"))
result={ }
for i in range(count):
        print("enter the details of student no ",i+1)
        rollno=int(input("roll number :"))
        stuname=input("student name : ")
        marks=int(input("marks :"))
        result[rollno]=[stuname,marks]
print(result)
print("name of student who got more than 75 marks :")
for student in result:
        if result[student][1]>75:
                print(result[student][0])
```