

## QUESTION 5

a) Write a Python program to demonstrate built-in modules (Random,Time, Math, etc,)

```
#Python Program 12- Python Modules
```

```
#Random Module
```

```
import random
```

```
dice1=[1,2,3,4,5,6]
```

```
print(random.choice(dice1))
```

```
print('-----')
```

```
#Math Module
```

```
import math
```

```
print(math.e)
```

```
print(math.pi)
```

```
print(math.tau)
```

```
print(math.inf)
```

```
print(math.nan)
```

```
print(math.asin(1.0))
```

```
print('-----')
```

```
#Time Module
```

```
import time
```

```
second=time.time()
```

```
print(second)
```

```
seconds=second
```

```
local_time=time.ctime(seconds)
```

```
print('local time: ',local_time)
```

```
print('printed immediately')
```

```
time.sleep(2.5)
```

```
print('printed after 2.5 seconds')
```

OUTPUT-

5

-----

2.718281828459045

3.141592653589793

6.283185307179586

inf

nan

1.5707963267948966

-----

1674665371.5737932

local time: Wed Jan 25 16:49:31 2023

printed immediately

printed after 2.5 seconds

b) Create a user defined module using python to execute the following a) area of circle

b) area of triangle c) area of rectangle.

# CREATING MODUE IN A NEW FILE(mymodule) AND THEN IMPORTING IT IN MA

IN FILE

```
import math
```

```
def areacircle(r):
```

```
    area=(math.pi*r*r)
```

```
    return round(area,2)
```

```
def arearectangle(a,b):
```

```
    area=a*b
```

```
    return area
```

```

def areatriangle(a,b):
    area=a*b/2
    return area

#Importing the module created in new file
import mymodule

print("On which geometric shape would you like to operate on?")
print("1. Rectangle")
print("2. Triangle")
print("3. Circle")

inp = int(input("Enter your choice(1-3) : "))

if(inp==1):
    a=int(input('Enter the value of length: '))
    b=int(input('Enter the value of breadth: '))
    ans=mymodule.arearectangle(a,b)
    print('The area of Rectangle is: ',ans,'units')
elif(inp==2):
    a=int(input('Enter the value of base: '))
    b=int(input('Enter the value of height: '))
    ans=mymodule.areatriangle(a,b)
    print('The area of the Triangle is: ',ans,'units')
elif(inp==3):
    r=int(input('Enter the value of radius: '))
    ans=mymodule.areacircle(r)
    print('The area of the circle is: ',ans,'units')
else:
    print('Invalid input ')

```

OUTPUT -

On which geometric shape would you like to operate on?

1. Rectangle
2. Triangle
3. Circle

Enter your choice(1-3) : 1

Enter the value of length: 8

Enter the value of breadth: 7

The area of Rectangle is: 56 units

On which geometric shape would you like to operate on?

1. Rectangle
2. Triangle
3. Circle

Enter your choice(1-3) : 2

Enter the value of base: 15

Enter the value of height: 20

The area of the Triangle is: 150.0 units

On which geometric shape would you like to operate on?

1. Rectangle
2. Triangle
3. Circle

Enter your choice(1-3) : 3

Enter the value of radius: 11

The area of the circle is: 380.13 units

On which geometric shape would you like to operate on?

1. Rectangle
2. Triangle
3. Circle

Enter your choice(1-3) : 4

Invalid input