NATIONAL TEXTILE UNIVERSITY

Department of Computer Science

Lab # 1: Artificial Intelligence (CSC-1071)

Basic Information			
Registration#		**Name**	
Total Marks	10	**Marks Obtained**	
Tools:	Any Interpreter of your choice		
Objectives	1. Simple Programs in Python 2. Selective Statements in Python	3. Functions in Python 4. Recursion in Python	

Simple Programs

1. Given an equation $y=ax^3+ax^2+x-7$. Input the values of a and x from user and display the value of y on screen
2. Ask the user to enter a value in miles and convert it in kilo meters 1 kilometer=0.6213 Mile
3. Implement a currency converter which ask the user to enter value in Pak Rupees and convert in following:

Australian Dollar	China Yuan	Euro	Qatari Riyal	Saudi Riyal	U.A.E Dirham	UK Pound Sterling	US Dollar
102.6	22	168.15	42.2	40.95	41.95	198.15	154

4. Draw a rectangle, triangle, and pentagon using forward function of turtle graphics
5. Input two points and draw line of size 3 and green color. Also compute the distance of the line
6. Input coordinate point of center of circle and radius draw a circle. Print the area of circle on center point
7. Draw the logo of Olympics
8. Draw triangle, square, pentagon, hexagon and octagon in horizontal straight line. Filled and not filled

Selective Statements

9. Take two integers from the user and check whether first is multiple of second
10. Input five integers from user and display minimum and maximum
11. (Body Mass Index Calculator): **BMI= weightInKilograms/ (heightInMeters^2)**. User will enter his weight in Kilograms and height in **meters (1 M=3.23 Feet)** and the BMI of the user and display following:
    - Display "You are Underweight" if BMI is less than 18.5
    - Display "You are Normal" if BMI is between 8.5 and 24.9
    - Display "You are Overweight" if BMI is between 25 and 29.9
    - Display "You are Obese" if BMI is greater than 30

    Use And (&&) operator for writing multiple conditions in the if statement

Functions

12. Write two functions **add** and **multiply** with five arguments and default values. These functions display result
13. Write a function, which takes 5 arguments and print their average. Call this function
14. Write a function, which takes 5 arguments and print the larges and smallest
15. Write a function which take the radius of circle as first argument and a char (**a** or **c)** as second argument. If second argument is **a** then return the area of circle. If the second argument is **c** then return the circumference of circle
16. Modify the two-number calculator problem and solve it using functions for add, sub etc. Return the results from these functions and display them in main.

Recursive Functions

17. Input a number and Print numbers up to that number in reverse
18. Input a number and print even numbers up to that number
19. Write a function with the name of **fact**, which calculate factorial of a value that is sent as an argument
20. Consider the Fibonacci series: 0, 1, 2, 3, 5, 8, 13, 21, 34, 55…., Input the index and print number in series
21. Input the index number and display Fibonacci series up to that index