GURU NANAK INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT
2022-2023
PROGRAMMING IN PYTHON
MCA20-101

TIME ALLOTTED: 3Hours   FULL MARKS:70

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable

GROUP – A
(Multiple Choice Type Questions)

Answer any *ten* from the following, choosing the correct alternative of each question: **10×1=10**

			Marks	CO No
1.	i)	Who developed Python Programming Language?	1	CO1

        (a) Wick van Rossum
        (b) Rasmus Lerdorf
        (c) Guido van Rossum
        (d) Niene Stom

ii) A group of 4 binary digits is called a   1   CO1
        (a) Bit
        (b) Nibble
        (c) Byte
        (d) Word

iii) The input () function takes the user's input as a   1   CO1
        (a) integer
        (b) float
        (c) string
        (d) character

iv) What is displayed on executing   print(math.fabs(-5.6))   1   CO3
        (a) -5.6
        (b) 5.6
        (c) 5
        (d) -5

v) Modules are files saved with the extension   1   CO2
        (a) .py
        (b) .mod
        (c) .dll
        (d) .ipy

vi) Which of the following is used to define a block of code in Python language?   1   CO2
        (a) Indentation
        (b) Key
        (c) Brackets
        (d) All of the mentioned

(vii) The computer understands only the language.   1   CO2
     (a) Assembly
     (b) Binary
     (c) High level
     (d) SQL

viii) Which data structure does not support indexing?   1   CO3
     (a) List
     (b) Tuple
     (c) Dictionary
     (d) Set

ix) What is the output of this code?   1   CO4
import random as r
print(random.randomint(1, 10))
     (a) An error occurs
     (b) 10
     (c) 1
     (d) any random value

x) Which member of the superclass is never accessible to the subclass?   1   CO3
     (a) Public member
     (b) Protected member
     (c) Private member
     (d) All of the mentioned

xi) The index of the last character in the string is   1   CO2
     (a) 0
     (b) 1
     (c) n-1
     (d) n

xii) Identify the correct result from the following   1   CO4
     (a) ord('10') = 50
     (b) chr(72) = 'H'
     (c) chr(55) = 9
     (d) ord('z') = 123

GROUP – B
(Short Answer Type Questions)
Answer any *three* from the following: 3×5=15

			Marks	CO No
2.	a)	Explain the utility of the break and continue statement with the help of an example.	3	CO1
	b)	List the rules to name an identifier.	2	CO1
3.	a)	Explain Syntax errors and Logic errors.	1	CO2
	b)	"We need to use the 'self' keyword for creating instance method" – Justify the statement with an example of your own.	4	CO2
4.	a)	What is a algorithm?	1	CO1
	b)	Write the algorithm or pseudocode for finding the factorial of the given number.	4	CO2

5.		What do you understand by the term garbage collection?	5	CO1

6.   Write a python code to print the following pattern: 5   CO3
A
AB
ABC
ABCD
ABCDE

GROUP – C
(Long Answer Type Questions)
Answer any *three* from the following: 3×15=45

			Marks	CO No
7.	a)	Describe all the features of Python in brief.	5	CO1
	b)	Write a program to find whether the given number is a prime number.	5	CO1
	c)	Write a program to count the number of each vowel in a word.	5	CO3
8.	a)	Differentiate between class variables and instance variables with examples.	5	CO2
	b)	With the help of an example explain the significance of the __init__() method.	5	CO4
	c)	Write a program to demonstrate the + (plus) operator overload of the class with examples.	5	CO4
9.	a)	What is a Module in python?	2	CO2
	b)	Explain, how you can use Modules in your program explain with an example code.	3	CO2
	c)	What happens if except clause is written without any Exception type? Explain with an example.	5	CO5
	d)	Demonstrate implementation of multiple inheritances in Python, with a program.	5	CO5
10.	a)	Write a program to calculate the sum of all numbers from m to n given by users.	5	CO3
	b)	Write a program to utilize try, catch, and finally block to handle division by zero and file not found error.	5	CO5
	c)	Write a program that counts the number of tabs, spaces, and newline characters in a file.	5	CO5
11.		Write short notes on any three of the following:	3x5=15	
	a)	Exploratory data analysis	5	CO3
	b)	Number systems	5	CO1
	c)	Numpy	5	CO2
	d)	Data visualizations	5	CO2