Printed Page:- **Subject Code:- AMCA0305**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

MCA

SEM: III - CARRY OVER THEORY EXAMINATION - APRIL 2023

Subject: Problem Solving using Python

Time: 3 Hours **Max. Marks: 100**

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. *This Question paper comprises of* **three Sections -A, B, & C.** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

SECTION A **20**

1. Attempt all parts:-

1-a. Which of the following declarations is incorrect in python language? (CO1) 1

(a) xyzp = 5,000,000

(b) x y z p = 5000 6000 7000 8000

(c) x,y,z,p = 5000, 6000, 7000, 8000

(d) x_y_z_p = 5,000,000

1-b. Which one of the following has the highest precedence in the expression? (CO1) 1

(a) Division

(b) Subtraction

(c) Power

(d) Parentheses

1-c. What is the output of the following program? z = lambda x : x * x, print(z(6)). (CO2) 1

(a) 6

(b) 36

(c) 0

(d) error

1-d. Escape sequence is represented by a ____ followed by one or more characters. (CO2) 1

(a) Front slash

(b) Double Quote

(c) Single Quote

(d) Back Slash

1-e. Which feature of OOPS described the reusability of code? (CO3) 1

(a) Abstraction

(b) Encapsulation

(c) Polymorphism

(d) Inheritance

1-f. Which of the following is the most suitable definition for encapsulation? (CO3) 1

(a) Ability of a class to derive members of another class as a part of its own definition

(b) Means of bundling instance variables and methods in order to restrict access to certain class members

(c) Focuses on variables and passing of variables to functions

(d) Allows for implementation of elegant software that is well designed and easily modified

1-g. Suppose d = {“john”:40, “peter”:45}, what happens when we try to retrieve a value using the expression d[“susan”]? (CO4) 1

(a) Since “susan” is not a value in the set, Python raises a KeyError exception

(b) It is executed fine and no exception is raised, and it returns None

(c) Since “susan” is not a key in the set, Python raises a KeyError exception

(d) Since “susan” is not a key in the set, Python raises a syntax error

1-h. Which of the statements about dictionary values if false? (CO4) 1

(a) Values of a dictionary must be unique

(b) More than one key can have the same value

(c) The values of the dictionary can be accessed as dict[key]

(d) Values of a dictionary can be a mixture of letters and numbers

1-i. What will be correct syntax for pandas series? (CO5) 1

(a) pandas_Series(data, index, dtype, copy)

(b) pandas.Series(data, index, dtype)

(c) pandas.Series(data, index, dtype, copy)

(d) pandas_Series(data, index, dtype)

1-j. Which method can be used to get the shortest path in networkx library. (CO5) 1

(a) shortest_path

(b) short_path

(c) shortestPath

(d) sortPath

2. Attempt all parts:-

2.a. Differentiate between unary & binary operator. (CO1) 2

2.b. Describe module in Python. (CO2) 2

2.c. Explain the role of constructor. (CO3) 2

2.d. Write a short note on except block with example. (CO4) 2

2.e. Differentiate between Matplotlib and Pandas. (CO5) 2

SECTION B **30**

3. Answer any five of the following:-

3-a. Illustrate the difference between break & continue when they occur in a loop. (CO1) 6

3-b. Justify the statement "Python is a dynamically typed programming language". (CO1) 6

3-c. Demonstrate map( ) function with example. (CO2) 6

3-d. Briefly explain closure in python with example. (CO2) 6

3.e. Describe Polymorphism with example. (CO3) 6

3.f. Explain the slicing, indexing and concatenation operation in list with example. (CO4) 6

3.g. Explain the functionality of tkinter canvas. (CO5) 6

SECTION C **50**

4. Answer any one of the following:-

4-a. Differentiate Python with other high level languages.(CO1) 10

4-b. Define following keywords with example: import, assert, global and None. (CO1) 10

5. Answer any one of the following:-

5-a.	Explain any five mathematical function defined under math module. (CO2)	10
5-b.	Explain how to create a function in python with a suitable example. (CO2)	10

6. Answer any <u>one</u> of the following:-

6-a.	Demonstrate how method is overridden in Python. Can we override static methods? (CO3)	10
6-b.	Write a Program in Python to implement multiple inheritance. (CO3)	10

7. Answer any <u>one</u> of the following:-

7-a.	Write a Python program to get the largest number from a list. (CO4)	10
7-b.	Write a Python program to create a union of sets. (CO4)	10

8. Answer any <u>one</u> of the following:-

8-a.	Write a Python program to draw a scatter graph taking a random distribution in X and Y and plotted against each other. (CO5)	10
8-b.	Briefly Describe Matplotlib bars. (CO5)	10