

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

M.C.A.

SEM: III - THEORY EXAMINATION (2022 - 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. Who developed the Python language? (CO1) 1
- (a) Zim Den
- (b) Guido van Rossum
- (c) Niene Stom
- (d) Wick van Rossum
- 1-b. Which character is used in Python to make a single line comment? (CO1) 1
- (a) /
- (b) //
- (c) #
- (d) !
- 1-c. Which of the following is the use of function in python? (CO2) 1
- (a) Functions are reusable pieces of programs
- (b) Functions don't provide better modularity for your application
- (c) you can't also create your own functions

- (d) All of the mentioned
- 1-d. Which of the following is not a valid namespace? (CO2) 1
- (a) Global namespace
 - (b) Public namespace
 - (c) Built-in namespace
 - (d) Local namespace
- 1 Under which pillar of OOPS do base class and derived class relationships come? (CO3) 1
- (a) Polymorphism
 - (b) Inheritance
 - (c) Encapsulation
 - (d) Abstraction
- 1 Identify the feature using which, one object can interact with another object. (CO3) 1
- (a) Messaging Passing
 - (b) Messaging Reading
 - (c) Data Binding
 - (d) Data Transfer
- 1-g. Choose the correct option with respect to Python. (CO4) 1
- (a) Both tuples and lists are mutable.
 - (b) Both tuples and lists are immutable.
 - (c) Tuples are immutable while lists are mutable.
 - (d) Tuples are mutable while lists are immutable.
- 1-h. _____ is a type of error produced in Python programs. (CO4) 1
- (a) compile time error
 - (b) run time error
 - (c) both A & B
 - (d) none of these
- 1-i. Pandas is an open-source _____ Library? (CO5) 1
- (a) Ruby
 - (b) Javascript
 - (c) Java
 - (d) Python

1-j.	Which graph should be used if we want to show distribution of elements? (CO5)	1
	(a) pie	
	(b) basemap	
	(c) bar	
	(d) histogram	

2. Attempt all parts:-

2.a.	Describe type conversion in Python. (CO1)	2
2.b.	Define decorators. (CO2)	2
2.c.	How does inheritance in Python take place? Explain with an example. (CO3)	2
2.d.	What is the difference between write and append mode? (CO4)	2
2.e.	Why is NumPy Faster than Lists? (CO5)	2

SECTION B

30

3. Answer any five of the following:-

3-a.	Define following string functions in Python: 1. len() 2. upper () 3. strip (). (CO1)	6
3-b.	Explain different logical operators in python. (CO1)	6
3-c.	Illustrate how function can be passed as parameter in python with example. (CO2)	6
3-d.	Describe the use of iter() and next() method. (CO2)	6
3.e.	Briefly explain the concept of data hiding in python with example. (CO3)	6
3.f.	How to handle exceptions with try-except-finally? (CO4)	6
3.g.	Explain different ways to create DataFrame in Pandas. (CO5)	6

SECTION C

50

4. Answer any one of the following:-

4-a.	Differentiate between Traditional programming cycle & Python programming cycle. (CO1)	10
4-b.	Write a program in Python to count the sum of digits of given number. (CO1)	10

5. Answer any one of the following:-

5-a.	Differentiate between generator function & normal function in Python. (CO2)	10
5-b.	Write a function in Python to check whether a given integer is negative or positive. (CO2)	10

6. Answer any one of the following:-

6-a.	Differentiate between Call by value & Call by reference with example. (CO3)	10
6-b.	How method overloading can be achieved in Python. (CO3)	10

7. Answer any one of the following:-

- | | | |
|------|---|----|
| 7-a. | Explain an exception? Explain an unreachable catch block error. (CO4) | 10 |
| 7-b. | Write a Python program to sum all the items in a list. (CO4) | 10 |

8. Answer any one of the following:-

- | | | |
|------|---|----|
| 8-a. | How does NumPy differ from Pandas. (CO5) | 10 |
| 8-b. | Explain what is tkinter used for in Python. (CO5) | 10 |