Subject Code:- ACSE0101

**Roll. No:** 

# NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

## (An Autonomous Institute Affiliated to AKTU, Lucknow)

### B.Tech

## SEM: I - CARRY OVER THEORY EXAMINATION - AUGUST 2023 Subject: Problem Solving using Python

### **Time: 3 Hours**

**Printed Page:-**

## **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

## 1. Attempt all parts:-

- 1-a. Which of the following is a structured programming technique that graphically 1 represents the detailed steps required to solve a program? [CO1]
  - (a) Object-oriented programming
  - (b) Pseudocode
  - (c) Flowchart
  - (d) Top-down design
- 1-b. The binary system uses powers of. [CO1]
  - (a) 2
  - (b) 10
  - (c) 8
  - (d) 16

1-c. What is the value of s[4 :1 :-1]. [CO2] Where s="Python"

(a) pyt

1

1

20

Max. Marks: 100

- (b) hon
- (c) yth
- (d) oht
- 1-d. A variable can be removed by using which keyword. [CO2]

1

1

1

1

- (a) remove
- (b) clear
- (c) del
- (d) delete
- 1-e.

What will be the output of the following Python code? [CO3] def printMax(a, b):

if a > b:

```
print(a, 'is maximum')
```

```
elif a == b:
```

```
print(a, 'is equal to', b)
```

else:

```
print(b, 'is maximum')
```

- printMax(3, 4)
  - (a) 3
  - (b) 4
  - (c) 4 is maximum
  - (d) 3 is maximum
- 1-f. Which are the advantages of functions in python? [CO3]
  - (a) Reducing duplication of code
  - (b) Decomposing complex problems into simpler pieces

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- (c) Improving clarity of the code
- (d) All of the mentioned
- 1-g. What will be the output of the following Python Code? [CO4]

L1=[1,2,3]

L2=[4,5,6]

[x\*y for x in L1 for y in L2]

(a) [4, 8, 12, 5, 10, 15, 6, 12, 18]
(b) [4, 10, 18]
(c) [4, 5, 6, 8, 10, 12, 12, 15, 18]
(d) [18, 12, 6, 15, 10, 5, 12, 8, 4]

1-h.	What will be the output of the following Python Code? [CO4]	1
	2=[-2,-4,-6]	
	for i in zip(L1, L2):	
	print(i)	
	(a) 2,-2	
	44	
	6,-6	
	(b) [(2, -2), (4, -4), (6, -6)]	
	(c) (2,-2)	
	(44)	
	(6,-6)	
	(d) [-4, -16, -36]	
1-i.	If no exception occurs, thenblock is skipped. [CO5]	1
	(a) try	
	(b) except	
	(c) else	
	(d) finally	
1-j.	Which block will be executed always in exception handling. [CO5]	1
	(a) try	
	(b) except	
	(c) finally	
	(d) else	
2. Atte	empt all parts:-	
2.a.	Define operators in python. [CO1]	2
2.b.	Print series 1,2,3,4,6,7,8,10 using continue. [CO2]	2
2.c.	What is the use of the return statement. [CO3]	2
2.d.	Write a python program to find length of word in a string . [CO4]	2
2.e.	When "NameError" Occurs in python program? Give example. (CO5)	2
	SECTION B	30
3. Ans	wer any <u>five</u> of the following:-	
З-а.	Define an algorithm. How it is useful in the context of software development? [CO1]	6
3-b.	Differentiate among Assembler, Compiler and Interpreter. [CO1]	6

3-c.	Write a program to determine whether a digit, uppercase or lower case is entered.[CO2]	6
3-d.	Write a Python Programs to print following patterns: [CO2] A B C D E F G H I J K L M N O	6
3.e.	Write a function that takes a number as a parameter and check the number is prime or not.	6
3.f.	Differentiate between the following methods of list using example: [CO4] a) append() and extend() b) pop() and remove()	6
3.g.	Describe different types of errors in programming language. [CO5]	6
	SECTION C	50
4. Answe	er any <u>one</u> of the following:-	
4-a.	Draw a flow chart and write algorithms to find sum of cubes of all digits of a number. Also write down all symbols used in flow chart with their purpose.[CO1]	10
4-b.	Write a python program to illustrate all Bitwise operators. Also, show the expected output.[CO1]	10
5. Answe	er any <u>one</u> of the following:-	
5-a.	What is palindrome number?Write a Python Program to check if a number is Palindrome or not.(Without using function) [CO2]	10
5-b.	Write a Python Programs to print following patterns: [CO2] * *** **** **** **** **** **** ****	10
	*	
6. Answe	er any <u>one</u> of the following:-	
6-a.	Explain recursion. Write a program to reverse a string using recursion. (CO3)	10

6-b. What are packages? Give an example of package creation in Python. Write a 10

small code to illustrate the use of package in Python. (CO3)

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

- 7-a. Explain the slicing, indexing and concatenation operation in list with example. 10[CO4]
- 7-b. Differentiate between the following methods of set using example: [CO4]
  10
  a) difference() and difference\_update()
  - b) union() and update()

#### 8. Answer any one of the following:-

- 8-a. Describe the mutilple exceptions in python with a suitable example. Explain the 10 role of else and finally block in exception handling. [CO5]
- 8-b. Discuss Exceptions and Assertions in python. How to handle Exceptions with 10 Try-Except? Explain 5 Built-in Exceptions with example. [CO5]

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