BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BTECH / BARCH   SEMESTER : IV
BRANCH: BT/ECE/EEE/MECH/CHEMICAL/PROD/ARCH   SESSION : SP/2023

SUBJECT: IT271 INTRODUCTION TO PYTHON

TIME: 3 Hours   FULL MARKS: 50

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

			CO	BL
Q.1(a)	Explain and compare the approaches for designing an algorithm	[5]	1,	1,1
Q.1(b)	Which data type will you use to represent the following data values?	[5]	1,	1,1

      (i)   Number of days in a year
      (ii)   The circumference of a circle
      (iii)   Your father's salary
      (iv)   Distance between the moon and the earth
      (v)   Name of your best friend
      (vi)   Whether you would go to the party?

Q.2(a)	(i) Write a program to find whether the given number is an Armstrong number or not. (Hint: $371=3^3 + 7^3 + 1^3$)	[5]	2,4,2	
	(ii) Program that uses different methods (upper, lower, split, join, count, replace, and find) on the string object.			
Q.2(b)	(i) Write a program to print the following pattern.	[5]	2,4,2	

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1
2 1 2
3 2 1 2 3
4 3 2 1 2 3 4
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(ii) Write a program to extract the first n characters of a string.

Q.3(a)	Write a function is_prime() that returns a 1 if the argument passed to it is a prime number and a 0 otherwise.	[5]	3,4,3
Q.3(b)	Write a program to calculate the area of a triangle using a function.	[5]	3,4,3
Q.4(a)	Write a program to copy one file into another. Copy one character at a time.	[5]	4,5,4
Q.4(b)	Program to handle the divide by zero exception.	[5]	4,5,4
Q.5(a)	Program to demonstrate the multi-level inheritance of at least 3 using constructors.	[5]	5,6,5
Q.5(b)	Program to demonstrate the hybrid inheritance.	[5]	5,6,5

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