

MCA-6105
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[Total No. of Questions - 9] [Total No. of Printed Pages - 3]

MAY-24-1046

MCA-6105 (Python Programming)

MCA-1st CBCS/NEP

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note: Attempt five questions in all, selecting one question each from Section A, B, C and D. Section E is compulsory.

SECTION A

1. Write a recursive method to find the sum of the first n terms in the following series, n is the user input. Where, $1 < n < 1000$. (12)

$$1 - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \frac{1}{5} - \dots = \sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{n}$$

OR

2. Ask the user to input a number N. Given a string S. Write a python program to define a function that takes the string S as an arguments and returns two list VL and CL, such that VL contains only the strings that starts with vowels and CL contains the strings that starts with consonants. (12)

Sample Input: S = "He is a good student. He is from India."

Output: L1 =[is, a, India] L2 = [He, good, student, from].

SECTION B

3. Write a Python program to create a class representing a bank. Include methods for managing customer accounts and transactions. (12)

OR

4. Write a Python program to read n number of characters (n is user given) from a non-empty text file (e.g., example1.txt) containing only alphanumeric values, and then check each of the characters and write them into another file (e.g., example2.txt) using the following rules: if the read character is a digit or a capital letter, write it as it is; otherwise, convert the character into capital letter and write it. (12)

SECTION C

5. How python manages exceptions? Write a Python program that opens a file and handles a FileNotFoundError exception if the file does not exist. Also raise an exception if the file is not in .pdf format and size is more than 500 KB. (12)

OR

6. Write a Python program to update a specific column value of a given table and select all rows before and after updating the said table. The table name, column name and the updated value must be entered by the user. (12)

SECTION D

7. Given file name subscriber.csv contains name, mobile number and email address of each subscriber in csv format. Write a python program to read the emails from file and sending email to each subscriber with the message "Thank you for subscribing". (12)

OR

8. Write a NumPy program to compute the x and y coordinates for points on a sine curve and plot the points using matplotlib. (12)

[P.T.O.]

SECTION E (Compulsory)

(6×2=12)

9. a. What is the difference between error and exception?
- b. How can we connect python to database?
- c. Write the code to create a database named abc_db in MySQL using python.
- d. How can we debug the python code?
- e. How can we create a 2D array of size M X N using NumPy?
- f. What are the applications of SciPy library?