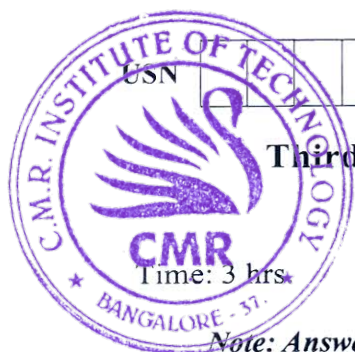


CBCS SCHEME

20MCA31



USN

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

Third Semester MCA Degree Examination, Jan./Feb. 2023

Data Analytics using Python

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- Define keywords, statements, expressions, variables, precedence and associativity with examples and syntax. (10 Marks)
 - Explain with syntax and example different types of Python data types and type() function. (10 Marks)

OR

- Discuss different forms of if control statements with necessary examples. (10 Marks)
 - What is a function? Mention its types. Write a python program to add two numbers using function, read input from the user. (10 Marks)

Module-2

- Define string. Explain with necessary coding five basic string operations. Explain string slicing and joining. (10 Marks)
 - Explain List creation, indexing and built in functions used on lists with syntax and examples. (10 Marks)

OR

- Differentiate between sets, tuples and dictionaries. Write a python program to demonstrate encapsulation and overloading. (10 Marks)
 - What is inheritance? Explain different types of inheritance with necessary example. (10 Marks)

Module-3

- Define creating an array from Python lists. Explain numpy array attributes. (06 Marks)
 - Discuss with example numpy array concatenation and splitting. (08 Marks)
 - Explain specialized universal functions:
(i) Trigonometric (ii) Exponents and logarithms with necessary coding. (06 Marks)

OR

- Mention Pandas data structures. Create a dataframe with three dimensional list state, year, POP (dictionary). Write necessary coding for retrieving row values and modifying column values. (06 Marks)
 - Explain with example the concept of reindexing and ffill method. (06 Marks)
 - How do we handle missing data in Python using Pandas? Explain with coding. (08 Marks)

Module-4

- Explain reading and writing data in text format in Python with examples. (10 Marks)
 - Explain the following methods with respect to database interaction:
i) Create ii) insert iii) connect iv) execute v) fetch all. (10 Marks)

OR

- 8 a. Explain with example the following merge methods:

i) inner ii) left iii) right

Create two dataframes with the following :

df1:

data1	key
0	b
1	b
2	a
3	c
4	a
5	b

df2:

data2	key
0	a
1	b
2	a
3	b
4	d

(10 Marks)

- b. Explain Data transforming using a function or mapping. Create a dataframe with the following columns:

Food	Ounce
Bacon	4.0
Pulled pork	3.0
Bacon	12.0
Honeyham	5.0

Add a column indicating the type of animal that each food come from.

(10 Marks)

Module-5

- 9 a. Write a Python program to plot sinusoid and cosine waves using Matplotlib and label them with necessary title and labels. (10 Marks)
- b. Explain with necessary coding creating a basic error bars and continuous errors. (10 Marks)

OR

- 10 a. Write a Python program to plot the histogram as follows (customized histogram). [Refer Fig.Q10(a)].

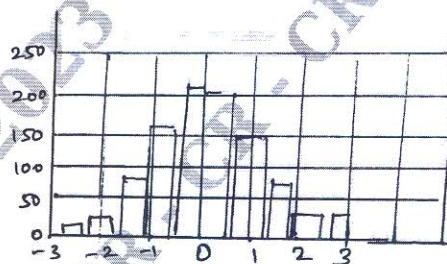


Fig.Q10(a)

(10 Marks)

- b. What is Seaborn plot? Explain pair plots for 'iris' dataset and kernel density estimation using kdeplot and displot. (10 Marks)
