Total No. of Questions : 5]

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SEAT No. :

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[6120]-106

First Year M.C.A. (Management)

IT - 21 : PYTHON PROGRAMMING

(2020 Revised) (Semester - II)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*
3) *Assume suitable data if necessary.*

Q1) a) Write a program to create a list of words from the given string which are less than size 'A'.

Input String: "Python programming language has lot of applications in data analytics".

Input $n = 8$ [5]

b) Explain the concept of modules and packages with suitable example. [5]

OR

a) Explain generators with example. [5]

b) Write a program to swap two numbers without using temporary variable accept input from the user. [5]

Q2) a) What is thread? Write a program that creates two threads. One thread should print even numbers from 2 to 8 and the other should print odd numbers from 1 to 7. [5]

b) Write a program to accept an integer number and use try/except to catch the exception if a floating point number is entered. [5]

OR

a) What is thread synchronization? Explain with suitable example. [5]

b) Write a program that reads a text file and counts the number of lines and words in the file. [5]

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Q3) a) Write a program to validate strong password using regular expression - specify rules for the strong password. **[5]**

b) Create a class "Bank" having attributes "Bank name" "Branch", "City", "Manager Name" and methods" "Change manager name" and "Display details." Wirte a constructor to initialize the instance variables. Write a main program to demonstrate the use of Bank class. **[5]**

OR

a) Write a program to find the occurrence and position of the substrings within a string consider user input. **[5]**

b) Write a program to demonstrate the overriding of the base class method in the derived class. **[5]**

Q4) a) Write a program using mango DB database to create a "employee". Collection having fields Emp ID, Name, Designation, Mobile, Department. Accept the input from the user to insert the documents. **[5]**

b) What is string slice? How it is useful. **[5]**

OR

a) Explain deep copy with suitable example. **[5]**

b) Write a program using monogo DB database to create a collection "Chess competition" with fields (Player_id, player_name, player_age, player_phone) and display all registrations. **[5]**

Q5) a) Create pandas dataframe using 2D list and perform following operations. **[5]**

    i) Display first 5 rows.

    ii) Count missing values in column 2nd.

b) Create 3×3 numpy array and determine median and mode. **[5]**

OR

a) Create dataframe using three series having size 10, series are account number, name and balance. **[5]**

b) Draw pie chart using matplot lib and decorate it by adding various elements use suitable data. **[5]**

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