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SEAT No. :

PC-3244

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[6383]-1001
M.C.A. (Management)
IT-11 : PYTHON PROGRAMMING
(2024 Pattern) (Semester -I)

Time : 2½ Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

Q1) **Solve any Two :** **[2 × 5 = 10]**

a) Create a dictionary containing any 5 elements in the form of key, value pair, and write python code to perform the following operations on it.

i) To display all the keys.

ii) To add new key value pair.

iii) To delete specific element from the dictionary.

iv) To modify value of a particular key.

b) Write a program which swap every odd - even position character in the string (e.g.Input: 'abcdef' out put: 'badcfe').

c) Write a program to create the separate list by taking the first letter of each word from the original string using list comprehension.

Input list : ['Ajay', 'Vijay', 'Ganesh', 'Paresh', 'Mahesh']

Out put list : ['A', 'V', 'G', 'P', 'M']

d) Write a program to create a set by accepting n elements (0-9 or A-Z or a-z) input from the user.

i) Display the set elements

ii) Length of set

iii) Count number of digits, lowercase letters, upper case letters in a set.

P.T.O.

Q2) **Solve any Two :** **[2 × 5 = 10]**

a) Write a function to accept string from user and it will return reverse each word of string.

b) Write a generator function my - range (start, stop, step) which will accept three arguments as start, stop, and step and generate a given range.

c) Write user defined exception program in python which will find the factorial of a number. If number is less than zero it should raise the exception as 'Invalid Input'.

d) Explain the use of any five functions from the random module with suitable example.

Q3) **Solve any Two :** **[2 × 5 = 10]**

a) Create a class student having attributes 'First Name', 'Last Name', 'Qualification' and methods 'update Qualification', 'Display details', and a constructor to initialize the values. Write main program to demonstrate the use of student class.

b) Describe the concept of Delegation and containership with suitable example.

c) Write a program to validate email address using regular expression.

d) Write a multitreaded program, where one thread prints square of a number and another thread prints cube of numbers. Make use of thread synchronization.

Q4) **Solve any One :** **[1 × 10 = 10]**

a) Write a mongo DB program to create a "Books" collection having fields : Title, Author, Publisher, Price. Write a code to proform following operations :

i) Insert 5 documents into Books collection.

ii) Retrieve books whose publisher is 'pearson'.

iii) Retrieve books whose price is between 400 to 600.

iv) Retrieve books in the descending order of price.

v) Update the price of book by 10% whose title is 'Python'.

vi) Update the title of a book whose author is 'Guido' and publisher is 'BPB'.

vii) Delete books whose price is greater than 500.

b) Write a mongo DB program to create a 'student' collection having fields : Roll No, Name, Course, Marks, Grade point. Write a code to perform following operations:

i) Insert 5 documents into Student collection.

ii) Find students having marks between 80 to 90.

iii) Update name of a student whose roll no.is 5.

iv) Display top 3 students according to their grade points.

v) Display students having highest grade points.

vi) Find all students having course 'MCA'.

vii) Display all student's in the descending order of marks.

Q5) **Solve any Two :** **[2 × 5 = 10]**

a) Design Django web page for student registration to a course and display it.

b) Write a code to send Date and Time from views py to template file.

c) Write a short note on Django Rest Framework (DRF).

d) How do you map a view to a URL in Djargo. Explain with suitable example.

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