

Total No. of Questions : 5]

SEAT No. :

P3344

[Total No. of Pages : 5

[6027]-21

First Year M.C.A (Management)
IT 21-PYTHON PROGRAMMING
(2020 Pattern) (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.*

Q1) A) choose the correct option (½ marks each) [10]

- a) Which of the following is not an immutable data type?
 - i) Set
 - ii) String
 - iii) Tuple
 - iv) Byte
- b) Which of the following is an immutable as well as unordered collection?
 - i) Set
 - ii) String
 - iii) Dictionary
 - iv) Frozen set
- c) What is the output of this expression $2**3**2$?
 - i) 64
 - ii) 512
 - iii) 12
 - iv) Error
- d) The keyword that is used to define the block of statements in function?
 - i) def
 - ii) funBlock
 - iii) fune
 - iv) defFunction
- e) Which of the following is not a correct way of importing math module?
 - i) import * from math
 - ii) from math import *
 - iii) import math as mt
 - iv) from math import pi

P.T.O.

- f) The command that is used to install a third-party module in Python is
- i) pip
 - ii) import
 - iii) py
 - iv) install
- g) To include the use of functions which are present in the random library, we must use the option.
- i) random.h
 - ii) import.random
 - iii) import random
 - iv) random.random
- h) Which of the following statements can be used to check, whether an object “obj” is an instance of class A or not
- i) obj.isinstance(A)
 - ii) A.isinstance(obj)
 - iii) isinstance(obj, A)
 - iv) isinstance(A, obj)
- i) The members of a class, by default are
- i) Public
 - ii) Private
 - iii) Protected
 - iv) Static
- j) What is the syntax to lookup the maruti attribute in an object stored in the variable car?
- i) car → maruti
 - ii) car :: maruti
 - iii) car.maruti
 - iv) car ['maruti']
- k) Which character stand for starts with in regex?
- i) &
 - ii) \$
 - iii) ^
 - iv) #
- l) Which of the following special characters matches a pattern only at the end of the string?
- i) \B
 - ii) \X
 - iii) \Z
 - iv) \A
- m) What is the method name to retrieve the list of all active threads?
- i) enumerate()
 - ii) threads()
 - iii) getlist()
 - iv) getThreads()

- n) Command to keep thread in sleep mode?
- i) Thread.Sleep
 - ii) Thread-Sleep
 - iii) ThreadSleep
 - iv) thread-sleep
- o) _____ method is used to know the current file cursor position within the file.
- i) tell()
 - ii) seek()
 - iii) offset()
 - iv) Cursor()
- p) _____ represents column in NoSQL.
- i) Field
 - ii) Document
 - iii) Database
 - iv) Collection
- q) The most important object defined in NumPy is an N-dimensional array type called?
- i) narray
 - ii) Ndarray
 - iii) ndarray
 - iv) NdArray ()
- r) The object that is returned after reading CSV file in pandas is _____
- i) Character vector
 - ii) Panel
 - iii) DataFrame
 - iv) None
- s) Which of the following is used for line graph?
- i) plt.line()
 - ii) plt.bar
 - iii) plt.plot
 - iv) plt.scatter
- t) Which of the following is the standard data missing marker used in pandas?
- i) Null
 - ii) None
 - iii) Nan
 - iv) All

- Q2)** a) Write a program to check if the input year is leap year or not. Validate the input. [3]
- b) Write a program to find the factorial of a number using recursion. [3]
- c) What is inheritance? Explain the concept of multiple inheritance with the help of suitable example. [4]

OR

- a) What is tuple? What is the difference between list and tuple? Explain with example. [3]
- b) Write a program to print the sum of natural numbers using recursion. [3]
- c) What is inheritance? Explain the concept of multilevel inheritance with the help of suitable example. [4]

- Q3)** a) Write a program to reverse each word of "data.txt" file. [2]
- b) Write a python program using MongoDB database to create a "Books" collection having fields: title, Author (a list), Publisher, PubAddress, (a dict with keys like area, city, country), Price, ISBN. Accept input from user to insert documents. [3]
- c) Write a mongoDB program to update the "Books" collection given in Q.No. 3-b. [2]
- d) Write a program to accept decimal number and print its octal and hexadecimal equivalent. [3]

OR

- a) Write a program to read the contents of file and display occurrence of given character. [2]
- b) Write a python program using mongoDB database to create a "student" collection having fields: Student-ID, Name, Course, Mobile, Address. (a dict with keys like area, city, country, pin) Accept input from user to insert documents. [3]
- c) Write a MongoDB program to delete selected documents given in Q.No.3b. [2]
- d) What is dictionary in Python? Explain with examples. [3]

- Q4)** a) Write a program to validate email address using regular expression. Also explain the meaning of each and every special character of the regular expression used by you in this program. [4]
- b) Write user defined exception program in python which will except age as an input from the user and check whether the user is eligible for voting or not. If age<18 it should raise the exception as 'Not eligible for voting'. [4]
- c) Write a Note on : Modules and packages in Python. [2]

OR

- a) Write a program to validate URL using regular expression. Also explain the meaning of each and every special character of the regular expression used by you in this program. [4]
- b) Write multithread program, where one thread prints square of a number and another thread prints cube of numbers. Also display the total time taken for execution. [4]
- c) Explain anonymous function with example. [2]

- Q5)** a) Create a 5×5 2D numPy array and retrieve bottom right corner 2×2 array from it. [4]
- b) Given a dataFrame df in Pandas as below: [4]

City	MaxTemp	MinTemp	RainFall
Delhi	40	32	24.1
Bengaluru	31	25	36.2
Chennai	35	27	40.8
Mumbai	29	21	35.2
Kolkata	39	23	41.8

Write commands:

- to compute sum of every column of the dateFrame.
 - to compute mean of column rainFall.
 - to compute Median of the MaxTemp column.
 - to display all column names.
- c) Explain constructors in Python. [2]

OR

- a) Create a 4×3 numPy array and find it's column-wise mean. [2]
- b) Create a series from a numPy array and find frequency count of unique items of a series. [2]
- c) Create a pandas dataFrame using CSV file and perform a following:
- Display first 10 rows.
 - Display list of all columns. [4]
- d) Explain operator overloading in Python. [2]