CBCS SCHEME

15CS664 USN

Sixth Semester B.E. Degree Examination, June/July 2019 Python Application Programming

Max. Marks: 80 Time: 3 hrs.

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

Module-1

- (05 Marks) a. List the features of Python Programming Language (at least FIVE)
 - b. What is the role of a programmer? List two skills required to be a programmer. (05 Marks)
 - Explain the chained and nested conditional execution statements along with syntax and flow chart. (06 Marks)

OR

- What are Python words and sentences? Explain with an example for each. (04 Marks)
 - b. Differentiate compiler and interpreter. (04 Marks)
 - c. Write python programs to i) Find largest of three numbers Check whether the given year is leap year or not with functions. (08 Marks)

Module-2

- a. With syntax, explain the finite and infinite looping constructs in python. What is the need for break and continue statements. (08 Marks)
 - b. Write a Python program to generate and print prime numbers between 2 to 50. (04 Marks)
 - c. What are String slices? Explain the slicing operator in Python with examples. (04 Marks)

- Write a Python program to count the number of occurrences of a given word in a file.
 - (06 Marks)
 - b. Write a Python function that takes decimal number as input and convert that to binary equivalent and return the same. (04 Marks)
 - List any six methods associated with strings and explain each of them with an example.

(06 Marks)

Module-3

- What are the ways of traversing a list? Explain with an example for each. (04 Marks)
 - Differentiate Pop and Remove methods on lists. How to delete more than one element from a list (06 Marks)
 - Write a Python program that accepts a sentences and build dictionary with LETTERS. DIGITS UPPER CASE, LOWER CASE as key values and their count in the sentences as values. Ex : Sentence = "VTU@123.e-Learning"
 - "LETTERS": 12, "DIGITS": 3, "UPPER CASE": 4, "LOWER CASE": 8}.

(06 Marks)

- (04 Marks)
- Compare and contrast lists and tuples. Write a program to check the validity of a password read by users. The following criteria should be used to check the validity. Password should have atleast
 - One lower case letter ii) One digit iii) One upper case letter
 - iv) One special character from [\$ # (a !) v) Six character.

Your program should accept a Password and check the validity using above criteria and print "valid" or "invalid" as the case may be.

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On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice rtant Note : 1.

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c. Demonstrate i) how a dictionary items can be represented as a list of tuples. ii) How tuples can be used as keys in dictionaries?

(04 Mar

(02 Marks)

- 7 a. What is a Class? How to define a class in Python? How to instantiate a class and how the (04 Marks) class members are accessed?
 - Differentiate class variables and instance variables.
 - c. Write a Python program that uses datetime module within a class, takes a birthday as input and prints the age and the number of days, hours, minutes and seconds until the next (10 Marks) birthday.

- a. Write a program that has a class Point with attributes as X and Y co-ordinates. Create two objects of this class and find the midpoint of both the points. Add a method reflex x to class point, which returns a new point. Which is the reflection of the point about the x - axis.
 - Ex : point $(5, 10) \Rightarrow \text{reflex} x \text{ returns point } (5, -10).$

(06 Marks)

- b. Differentiate between simple, multiple and multi-level inheritance.
- (06 Marks) c. Write a program that has a class Person, Inherit a class Student from Person which also has a class MarksAttendance. Assume the attributes for Person class as : USN, Name, dob, gender. Attributes for Student class as: Class, branch, year, MA. Attributes for MarksAttendance : Marks, Attandance. Create a student S = Student ("1AB16CS005", "XYZ", "18-1-90", "M", 85, 98) and (04 Marks) display the details of the student.

Module-

- a. Demonstrate with the help of Python construct i) how to retrieve an image over HTTP. (08 Marks) ii) how to retrieve web pages with urllib.
 - Compare and contrast the JavaScript object Notation (JSON) and XML. (04 Marks)
 - What is Service Oriented Architecture? List the advantages of the same. (04 Marks)

- 10 a. Write a Python program that retrieve an user's Twitter friends, Parse the returned JSON and extract some of the information about the friends. (08 Marks)
 - b. Create a simple spidering program that will go through Twitter accounts and build a (08 Marks) database of them.

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