CBCS SCHEME

USN | | | | | | | | | | |

21EC643

Sixth Semester B.E. Degree Examination, June/July 2024
Python Programming

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. List and explain the significant features of Python programming language. **(08 Marks)**

b. Write the math operators in Python from highest to lowest precedence with an example for each. Write the steps how Python is evaluating the expression (5 – 1) * (7 + 1) / (3 – 1) and reduces it to a single value. **(06 Marks)**

c. Demonstrate the syntax of Python functions : print( ), input( ) and str( ) with examples. **(06 Marks)**

OR

2 a. With proper syntax and examples, explain the control statements.
i) if ii) else iii) elif iv) break statement. **(08 Marks)**

b. Explain the local and global scope of the variable with a suitable example. **(06 Marks)**

c. Write a Python snippet to generate the Fibonacci series. **(06 Marks)**

Module-2

3 a. What are the lists? Explain append( ), insert( ) and remove( ) methods with examples. **(08 Marks)**

b. For the following two questions, spam contains the list ['a', 'b', 'c', 'd', [3, 4, 7, 2]]
i) What does span [-2] evaluate to?
ii) What does span [4] [1] evaluate to? **(05 Marks)**

c. Demonstrate with example of upper( ), lower( ), and isupper( ) and islower( ) string methods. **(07 Marks)**

OR

4 a. What is a dictionary? Compare dictionaries with lists. Write a program to count the number of occurrences of characters in string. **(08 Marks)**

b. Write a program to implement search and replace multiple occurrences of a given substring in the main string in a list. **(07 Marks)**

c. Define Tuple data type, explain converting types with the list( ) and tuple ( ) Functions. **(05 Marks)**

Module-3

5 a. With example, explain the following Pattern Matching with Regular Expressions.
i) Grouping with Parentheses
ii) Matching Multiple Groups with the Pipe. **(10 Marks)**

b. What are the steps involved in file handling? Also, explain the reading and writing process with suitable examples in Python. **(10 Marks)**

OR

6 a. Explain the basic steps for creating and finding regular expression objects with Python. **(06 Marks)**

b. Writ a python program to accept USN and marks objected. Find maximum, minimum and USN students who scored 100-85, 85-75, 75-60 and below 60 marks separately. **(06 Marks)**

c. Explain the purpose of the following special characters used in optimal matching regular expression: ?, *, +, and {}. Illustrate with example. **(08 Marks)**

Module-4

7 a. Differentiate between class variables and instance variables with suitable examples. **(05 Marks)**

b. Write a program to create a class classed Rectangle with the help of a corner point, width and height. Write the following function sand demonstrate their working :

i) To find and display the center of the rectangle
ii) To display point as an ordered pair
iii) To resize the rectangle
iv) To find area and perimeter of a rectangle. **(10 Marks)**

c. Justify the statement "Objects are mutable" with suitable examples. **(05 Marks)**

OR

8 a. Explain – intit_( ) and – str_( ) methods with an example. **(10 Marks)**

b. Explain operator overloading and polymorphism with examples. **(10 Marks)**

Module-5

9 a. Write a Python program that makes a socket connection to a web server and follows the rules of the HTTP protocol to request a document and display what the server sends back. **(10 Marks)**

b. Illustrate with a python program how to retrieve web pages with urllib. **(10 Marks)**

OR

10 a. What is Service – Oriented Architecture (SOA)? List out the advantages of SOA. **(06 Marks)**

b. Discuss various keys used in the database model. **(06 Marks)**

c. Write the four SQL commands needed to create and maintain data. **(08 Marks)**

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