

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2024****Subject Code: 3150312****Date: 16-05-2024****Subject Name: Python Programming for Biomedical Engineers****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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|------------|---|-----------|
| Q.1 | (a) Explain the importance and usage of indentation in Python. | 03 |
| | (b) Explain below given function with necessary examples.
1. type 2. range 3. zip 4. len | 04 |
| | (c) Write a program to get a string input from the user and print the number of words, digits, uppercase letters and lowercase letters in the sentence. | 07 |
| Q.2 | (a) Give the list of Python keywords. | 03 |
| | (b) Enlist the string methods. | 04 |
| | (c) Write a program to take an input year from the user. Write a function called <i>leap_year</i> which prints whether the input year is a leap year or not. | 07 |
| | OR | |
| | (c) Write python program to sort numbers in a list in ascending order using bubble sort by passing the list as an argument to the function call. | 07 |
| Q.3 | (a) Explain format string with example. | 03 |
| | (b) Explain the continue and break statements with example. | 04 |
| | (c) Write a function called <i>rotate_word</i> that takes a string and an integer as parameters, and that function should return a new string containing the letters from the original string “rotated” by the given amount. For example, “cheer” rotated by 7 is “jolly” and “melon” rotated by –10 is “cubed”. | 07 |
| | OR | |
| Q.3 | (a) Define arguments and keyword arguments in functions. | 03 |
| | (b) Explain Indexing and Slicing in string, list and tuple. | 04 |
| | (c) Write a function that prompts the user to enter five numbers, then find the GCD of these numbers. | 07 |
| Q.4 | (a) Describe the traversing of sets with example. | 03 |
| | (b) Enlist the functions used for plotting data by matplotlib. | 04 |
| | (c) Create a dictionary that contains usernames as the key and passwords as the associated values. Make up the data for five dictionary entries and demonstrate the use of clear and fromkeys() methods. | 07 |
| | OR | |
| Q.4 | (a) Define set datatype with appropriate example. | 03 |
| | (b) How to create dictionary datatype in Python? | 04 |

- (c) Create three sets consisting five colors, five flowers, and five values. Select random values from the sets and generate a formatted string as given below. "The garden blossomed with Seven Red Rose." where Seven, Red and Rose are from sets values, colors, and flowers respectively. **07**

- Q.5** (a) "String is a mutable datatype." True or False? Justify your answer. **03**
(b) What are the difference applications of NumPy and Pandas libraries. **04**
(c) Write a program to read the first n lines of a file. Prompt the user to enter the value for n. **07**

OR

- Q.5** (a) Give difference between pop, remove and del statement. **03**
(b) Enlist the modes to read and write data from a file. **04**
(c) Write a Python program to read a file and to convert a date of yyyy-mm-dd format to dd-mm-yyyy format. **07**
