**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, April 2023**

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|  | **2BT4166** | Roll No. | Total Printed Pages: 2 |
| **2BT4166** |  |
| B. Tech. II Year IV-Semester (Main/Back) End Semester Examination, April 2023  **(All Spl.)** | |
| **BCECCE4104 : Fundamentals of Python** | | | |

# Time: **3** Hours. Total Marks: **60**

Min. Passing Marks: **21**

Attempt **five** questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Use of following supporting material is permitted during examination for this subject.

# **1.--------------------------Nil--------------------** **2.------------------Nil-----------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** |
| **Q.1** | **(a)** | Elaborate different features of python. | **(6)** |
|  |  |  |  |
|  | **(b)** | Write applications of python and explain the difference in between python-2 and python-3. | **(6)** |
|  |  |  |  |
|  |  | **OR** |  |
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| **Q.2** | **(a)** | Write down all the data types available in python with example. | **(6)** |
|  |  |  |  |
|  | **(b)** | What are comments, keywords, and scope of variable in python? | **(6)** |
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|  |  | **UNIT-II (CO2)** |  |
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| **Q.3** | **(a)** | Write a python script to take a number from user in variable ‘n’ and print the sum of all number up-to the ‘n’ **using recursion**. Write a python script to take a number from user in variable ‘n’ and print the sum of all number up-to the ‘n’ using recursion.  (Ex – if 5 is entered the output must be 1+2+3+4+5 = 15) | **(6)** |
|  |  |  |  |
|  | **(b)** | Explain different operators available in python. | **(6)** |
|  |  |  |  |
|  |  | **OR** |  |
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| **Q.4** |  | Python program to check the validity of password input by users. The program should do the following –   1. Input password from user. 2. Consider condition 3 to 6 and set up flags for each criterion of a valid password. (Ex. - has\_valid\_length = False) 3. First verify if the **length** of password is higher or equal to 8 and lower or equal to 16. 4. iterate through each character of the password. 5. check if there are **lowercase** alphabets, check if there are **uppercase** alphabets. 6. check if the password **has digits**, check if the password **has** **special characters.**   Then only it will print that the password is valid. | **(12)** |
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|  |  | **UNIT-III (CO3)** |  |
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| **Q.5** | **(a)** | Write a Python function to count the number of even and odd numbers from a series of numbers. ( Numbers : 1, 2, 3, 4, 5, 6, 7, 8, 9). | **(6)** |
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|  | **(b)** | Take name and age from user and store it in dictionary using a python script. | **(6)** |
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|  |  | **OR** |  |
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| **Q.6** | **(a)** | Write a code using map and lambda functions, to find the squares of a given list of numbers.  Ex: Input: n=[3,4,5] Output:[9,16,25] | **(6)** |
|  |  |  |  |
|  | **(b)** | Write a code using filter and lambda functions, to find even numbers from a list of numbers.  Ex: Input n=[1,2,3,4,5] Output:[2,4] | **(6)** |
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|  |  | **UNIT-IV (CO4)** |  |
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| **Q.7** | **(a)** | Explain the difference between multiple inheritance and multilevel inheritance explain with an example. | **(6)** |
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|  | **(b)** | With the real world explain the data abstraction and encapsulation. | **(6)** |
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|  |  | **OR** |  |
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| **Q.8** | **(a)** | Write a suitable piece of code to demonstrate the difference in between method overloading and overriding. | **(6)** |
|  |  |  |  |
|  | **(b)** | Explain features of Object-Oriented Programming. | **(6)** |
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|  |  | **UNIT V (CO5)** |  |
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| **Q.9** | **(a)** | How to open and close file? Also give the Syntax for same. | **(6)** |
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|  | **(b)** | Write a program to read data from two text files and then write that data into another file (sample.text). | **(6)** |
|  |  |  |  |
|  |  | **OR** |  |
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| **Q.10** | **(a)** | What are different modes to open a file? | **(6)** |
|  |  |  |  |
|  | **(b)** | Write a program to count the total number of upper case, lower case, and digits used in the text file. | **(6)** |