

U.S.N.

# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## October 2024 Supplementary Examinations

**Programme:** B.E.

**Branch:** Common to all Branches

**Course Code:** 22CS1ESPYP / 22CS2ESPYP

**Course:** Introduction to Python Programming

**Semester:** I / II

**Duration:** 3 hrs.

**Max Marks:** 100

- Instructions:**
1. Answer any FIVE full questions, choosing one full question from each unit.
  2. Missing data, if any, may be suitably assumed.
  3. Write expected output for all programs

| Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice. |   |    | UNIT - I   | CO  | PO  | Marks |
|--|---|----|--|-----|-----|-------|
|  | 1 | a) | Build a python code to demonstrate the working of a simple calculator with suitable output.  | CO3 | PO3 | 6     |
|  |   | b) | Analyze the below code, trace each iteration of “while” loop with relevant explanation along with the final output.<br>i = 0<br>while i < 5:<br>print(i)<br>i += 1<br>if i == 3:<br>break<br>else:<br>print(0)                   | CO2 | PO2 | 6     |
|  |   | c) | Define operator and operand. List all Arithmetic, Comparison and Logical operators used in Python with example   | CO1 | PO1 | 8     |
|  |   |    | UNIT – II  |     |     |       |
|  | 2 | a) | Illustrate the following string methods with a relevant example<br>i) len()    ii) capitalize()    iii) upper()    iv) strip()   | CO1 | PO1 | 4     |
|  |   | b) | Develop a python program that inputs list elements from user and makes a new list that has only the even elements of this list in it.  | CO3 | PO3 | 6     |
|  |   | c) | Develop a Python Program to input a string to check whether it is a Palindrome string or not.  | CO3 | PO3 | 6     |
|  |   | d) | a=['hello', 'how', [1,2,3], [[10,20,30]]]<br>Analyze the above statement and predict the output for following commands<br>(i) print( a[ : : ] )<br>(ii) print(a[-3][0])<br>(iii) print(a[2][ : -1])<br>(iv) print(a[0][ : : -1]) | CO2 | PO2 | 4     |

|   |    |   |       |       |    |
|---|----|---|-------|-------|----|
|   |    | <b>UNIT – III</b>   |       |       |    |
| 3 | a) | Summarize functions in python with syntax for function definition and a relevant example.   | CO1   | PO1   | 8  |
|   | b) | Develop a python code to count the number of characters in the string and store them in a dictionary data structure.  | CO3   | PO3   | 6  |
|   | c) | Illustrate the difference between lists, tuples and dictionaries.   | CO1   | PO1   | 6  |
|   |    | <b>OR</b>   |       |       |    |
| 4 | a) | Elucidate tuple by demonstrating the creation of a single element in a tuple and develop a python program to find the common elements between two tuples.   | CO1,3 | PO1,3 | 7  |
|   | b) | Analyze the below code which demonstrates user defined function to interchange first and last elements in a list. Complete the code by filling in the missing values marked as “?” and explain the code along with the expected output.<br><br><pre># Swap function ? swapList(List1):     size = ?(List1)     # Swapping     temp = List1[?]     List1[?] = List1[?]     List1[?] = temp     return List1 list1=[1,2,3,4,5] list2=swapList(?) print(list?)</pre> | CO2   | PO2   | 6  |
|   | c) | Develop a program that combines two lists into a dictionary without using builtin function “zip”.   | CO3   | PO3   | 7  |
|   |    | <b>UNIT - IV</b>  |       |       |    |
| 5 | a) | Create a class Employee to have the following: <ul style="list-style-type: none"> <li>Variables: emp_id, designation</li> <li>A constructor to initialize these values</li> <li>A method salary_calc that accepts basic salary as parameter, adds 10000 if designation is “clerk” and adds 12000 if designation is “Manager”.</li> </ul> Create 2 objects and call the appropriate method.  | CO3   | PO3   | 10 |
|   | b) | Demonstrate “try” and “except” which checks for user defined exception call with suitable example   | CO1   | PO1   | 10 |
|   |    | <b>OR</b>   |       |       |    |
| 6 | a) | Demonstrate the following with supporting code snippets<br>i) class    ii) objects    iii) inheritance  | CO1   | PO1   | 9  |
|   | b) | Develop a python code to demonstrate “ValueError” exception and “ZeroDivisionError” exception with all possible outputs   | CO3   | PO3   | 5  |
|   | c) | Summarize the concept of constructor object lifecycle in Python with relevant example   | CO1   | PO1   | 6  |

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|--|---|----|---|------------|------------|-----------|
|  |   |    | <b>UNIT - V</b>   |            |            |           |
|  | 7 | a) | Elucidate regular expressions and list any five Meta-characters or wild card characters used in regular expressions with supporting examples. | <i>CO1</i> | <i>PO1</i> | <b>10</b> |
|  |   | b) | Develop a program to compute the number of characters, words and lines in a file.   | <i>CO3</i> | <i>PO3</i> | <b>10</b> |

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SUPPLEMENTARY EXAMS 2024