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Code No. : 13165 N (A)

**VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD**

Accredited by NAAC with A++ Grade

**B.E. III-Semester Main Examinations, Jan./Feb.-2024**

**Programming Essentials in Python (OE-I)**

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from **Part-A** and any **FIVE** from **Part-B**

**Part-A (10 × 2 = 20 Marks)**

Q. No.	Stem of the question	M	L	CO	PO
1.	What is an identifier. Discuss identifier rules with examples	2	1	1	1
2.	What is the output of the following python code snippet? for j in range (1,20,2): if j%3 == 0: continue print(j)	2	2	1	1, 2
3.	Write a program that finds the greatest of three given numbers using functions. Pass the numbers as arguments.	2	2	2	1, 2
4.	What is type casting/coercion and when is it required?	2	1	2	1
5.	Give the output of following Python code: mstr = "Vasavi College of Engineering" print mstr [12::1] print mstr [-10:-1:2]	2	2	3	1, 2
6.	Differentiate between below methods for list data structure: (a) append() and insert() (b) del() and pop()	2	1	3	1
7.	Write a program to perform swapping of 2 numbers using tuple assignment.	2	2	4	1, 2
8.	What is the output of following code snippet: D={"Rollno":105,"Name":"Vasavi", "Course":"BE_CSE"} print(sorted(D.keys())) print(sorted(D.values()))	2	2	4	1, 2
9.	With an example program discuss about nested conditional statements along with while loop.	2	2	2	1
10.	What are different ways to traverse over the key-value pairs in a dictionary, explain those functions using an example.	2	1	4	1, 2
<b>Part-B (5 × 8 = 40 Marks)</b>					

Contd... 2

<p>11. a)</p>	<p>Write the output for the below code:</p> <pre> a = 32 b = 6 print('Addition :',a+b) print('Multiplication :',a*b) print('Division :',a/b) print('Exponent :',a**b) print('Floor division :',a//b) print(not equal or not:',a!=b) print(' less than or equal to :',a&lt;=b) c = 5 print("logical and:' ,c &gt; 3 and c &lt; 5) print(logical or:', c &gt; 3 or c &lt; 5) print('logical not:',(not(c &gt; 3 and c &lt; 5))) x = ["Rose", "Lotus"] print(' member in', "Rose" in a) print(' membership not', "Riya" not in x) y = ["Rose", "Lotus"] z = a print('identity: ', x is y) </pre> <p>Also list the order of operations and associativity when evaluating an expression having more than one operator.</p>	<p>4    2    1    1,2</p>
<p>b)</p>	<p>Write a python program that accepts a number from the user and find the reverse of a number.</p>	<p>4    3    1    1,2</p>
<p>12. a)</p>	<p>What is a function and list its advantages. Explain about positional, keyword, default and variable-length function arguments.</p>	<p>4    1    2    1,2</p>
<p>b)</p>	<p>Write a program to find the distance between two points using the below formula.</p> $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ <p>Use the respective square root function available in the math module to compute.</p>	<p>4    3    2    1,2</p>
<p>13. a)</p>	<p>Write a python program that accepts a string from the user and display the total no of upper case letters, lower case letters and any other special symbols.</p>	<p>4    3    3    1,2,3</p>
<p>b)</p>	<p>Write Python code to find Mean, Variance and Standard Deviation for a given list of numbers. List [4,2,0,1,3,45,23,89]</p>	<p>4    3    3    1,2,3</p>
<p>14. a)</p>	<p>Consider an application to read student marks and compute percentage and grade, How can you return more than one value student rollno, name, percentage and grade from a function highlight the packing and unpacking of tuples i.e., the way of assigning values to tuples.</p>	<p>4    2    4    1,2</p>

	<p>b) Write a Python program to get the top three items in a shop using dictionary. Sample data: {'item1': 45.50, 'item2':35, 'item3': 41.30, 'item4':55, 'item5': 24} Expected Output: item4 55 item1 45.5 item3 41.3</p>	4	2	4	1, 2
15. a)	<p>Write the syntax of the modulus operator, and with an example show how the result will be computed for below cases of Modulo operator using: a) integers            b) float        c) negative operands d) divmod()            e) fmod() Also write a program to display the even and odd numbers in the range 1 to 10 using modulus operator.</p>	5	3	1	1, 2
	<p>b) Write a Python program to calculate nCr with factorial function using recursion.</p>	3	3	2	1, 2
16. a)	<p>Write a Python program to check the validity of a password given by the user using isX functions. The Password should satisfy the following criteria:</p> <ul style="list-style-type: none"> <li>• Contain at least 1 letter between a and z</li> <li>• Contain at least 1 number between 0 and 9</li> <li>• Contain at least I letter between A and Z</li> <li>• Contain at least 1 character from \$, #, @</li> <li>• Minimum length of password: 6</li> <li>• Maximum length of password: 12</li> </ul>	4	3	3	1, 2
	<p>b) Discuss the following dictionary methods with an example. i) get() ii) keys() iii) pop() iv) update() v) values () vi) items()</p>	4	1	4	1
17.	<p>Answer any <i>two</i> of the following:</p>				
a)	<p>What are datatypes available in python. Consider the student data to store like roll number, name, CGPA, Qualified_JEE or not and display their details after reading the input.</p>	4	2	1	1, 2
b)	<p>Write a python program to accept employee details. Name, Id, experience as positional arguments and companyName as default argument and Projects_Title as a variable length argument.</p>	4	3	2	1, 2
c)	<p>Write a program to create a list of numbers in the range 1 to 20. Then delete all the numbers from the list that are divisible by 3.</p>	4	3	3	1, 2

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	37.5%
iii)	Blooms Taxonomy Level – 3 & 4	42.5%

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