

<b>Name:</b>	 <b>UPES</b> UNIVERSITY WITH A PURPOSE
<b>Enrolment No:</b>	

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**Online End Semester Examination, May 2021**

<b>Course: Programming with Python</b>	<b>Semester: IV</b>
<b>Program: B. Tech. CSE IFM</b>	<b>Time 03 hrs.</b>
<b>Course Code: CSAI 1001</b>	<b>Max. Marks: 100</b>

**SECTION A**

- 1. Each Question will carry 5 Marks**
- 2. Instruction: Complete the statement / Select the correct answer(s)/Short Text**

S. No.	Question	CO
Q 1	Mention various reserved words in Python.	CO1
Q2	Collections are passed as argument in functions, changes are done in function on that particular collection, in which collections changes will be reflected outside function and in which collections changes will not be reflected.	CO2
Q3	If arr1=np.array([[1, 2, 3, 4, 5], [6, 7, 8, 9, 10]]), how [7,8,9] elements are accessed using only negative slicing in numpy ?	CO4
Q4	Mention various widgets available in Tkinter.  _____	CO3
Q5	How NA values are removed in pandas and what is role of 'how=' and inplace='True'?	CO4
Q6	_____ component is used for single line text input and _____ is used for multiple line text input in Tkinter.	CO3

**SECTION B**

- 1. Each question will carry 10 marks**
- 2. Instruction: Write short / brief notes**

Q 1	Collections are of mutable and immutable types in Python? List these different types of collection types? Explain mutable collections with example?	CO1

Q 2	Explain various types of access modes in file stream? Write python program to copy image file to new image file.	CO2
Q 3	Write code for designing GUI form for Student registration having following details: (i) 'Enter name' Label with Entry widget to enter values (ii) 'Enter age' Label with Entry widget to enter values (iii) Radiobutton for year of study (choices -1,2,3,4) (iv) Checkbutton for choice of subjects like 'Python', 'Java', 'Scala' etc. (v) Submit button	CO3
Q 4	Write output with explanation for the following statements: (i) If <code>a= np.array([0,1,2,3],[4,5,6,7],[8,9,10,11])</code> , what is value of <code>a.min()</code> and <code>a.min(axis=1)</code> (ii) If <code>arr1=np.array([1,2],[3,4])</code> and <code>arr2= np.array([5,6],[7,8])</code> , what is value of <code>arr1*arr2, arr1+arr2, arr1-arr2, arr&amp;arr2</code> . (iii) How matrix multiplication is implemented in numpy. Use <code>arr1</code> and <code>arr2</code> as example given in part (ii). (iv) Create 4*4 matrix of zeros and ones using numpy (v) If <code>arr1=[1,2,3,4,5]</code> , what is value of <code>a&gt;2</code> and why?	CO4
Q 5	Use <code>str1= " Python Programming "</code> for writing the code for following statements: (i) Check whether the string is in title case (ii) Toggle cases (iii) Convert <code>str1</code> to upper case (iv) Remove Whitespaces (v) Count the occurrence of 'P' (vi) Split <code>str1</code> using space (vii) Replace 'g' with 'c' in <code>str1</code>	CO1

**Section C**

1. Each Question carries 20 Marks.
2. Instruction: Write long answer.

Q1	<p>How constructors are used in Python class. Write example code to use constructor and the use of <code>super()</code> to initialize values of subclass using superclass constructor. What are different types of Inheritance is Python? How multiple inheritance is implemented in Python?</p> <p style="text-align: center;">OR</p> <p>Exception handling is essential for proper program execution? Write answer in support of this statement. Where custom exception handling is required? Write program for following problem statement:</p> <p>The "Variety Retail Store" sells different varieties of Furniture to the customers. The list of furniture available with its respective cost is given below:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Furniture</th> <th>Sofa set</th> <th>Dining table</th> <th>T.V. Stand</th> <th>Cupboard</th> </tr> </thead> <tbody> <tr> <td>Cost in Rs.</td> <td>20,000</td> <td>8,500</td> <td>4,599</td> <td>13,920</td> </tr> </tbody> </table> <p>The furniture and its corresponding cost should be stored as a list. A customer can order any furniture in any quantity (the name and quantity of the furniture will be provided). If the required furniture is available in the furniture list (given above)</p>	Furniture	Sofa set	Dining table	T.V. Stand	Cupboard	Cost in Rs.	20,000	8,500	4,599	13,920	CO2
Furniture	Sofa set	Dining table	T.V. Stand	Cupboard								
Cost in Rs.	20,000	8,500	4,599	13,920								

	<p>and quantity to be purchased is greater than zero, then bill amount should be calculated. In case of invalid values for furniture required by the customer and quantity to be purchased, display appropriate error message and consider bill amount to be 0. Initialize required furniture and quantity with different values and test the results. Write a Python program to calculate and display the bill amount to be paid by the customer based on the furniture bought and quantity purchased.</p>	
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