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REVA UNIVERSITY
Bengaluru, India

Seventh Semester B.Tech-CSE Semester End Examination December 2017
Course (Subject): Programming with Python
Course Code: BTCS15F7530

Time: 3 Hours **Max. Marks: 100**

Note: *Answer ONE FULL question from each unit.*

UNIT – I

1. a) Describe the different Python datatypes that are available?Explain. Create, display and delete a Python datatype that are unordered. Give Example for each. 10

   b) List out the differences between Tuple and List. Give example. 5

   c) i) Review the following piece of code. Is it valid? 4

   ```
   >>> a,b,c=1,2,3
   >>> a,b,c
   ```

   ii) If it is valid, what it is trying to create?
   iii) Does it support any functions. Justify your answer?
   iv) What will happen if you try to add an extra element? Justify your answer?

   d) Predict the output of the following code? What is the use of using append and extend method. Justify your output. 6

   ```
   a=[13,56,17]
   a.append([87])
   a.extend([45,67])
   print(a)
   ```

OR

2. a) Write a program to perform basic mathematical operations. Write a user defined function for each operation. Create a doc string for each function. Display the output of each mathematical operation 10

   b) Create a list with the following elements 1,2,3,4,5. What are the different ways that are available where you can print the entire list(mention alteast 4) and also print the elements of list in reverse order. Give example for each by considering the above list. 6

   c) Explain the built-in functions that are available. Give example for each. 6

   d) Observe the following list where li = ["a", "b", "c", "exam", "b", "d", "a", "is"]. Write a program by considering the above list to display single occurrence of elements of the list, to display only the repetitive elements of the list, to display the elements whose length of the element is greater than 1. 3

UNIT – II

3. a) Write a program to create a class "Student" with class attributes name, sec, college, srn. Assign the values to the attributes using only constructor and display the values using class method by creating instance of a class. 8

   b) Differentiate between import module vs. from module import with example. 4

	c)	Construct a program to create a class "Dictionary" with class attribute "data". Use normal methods and special class methods to assign the values to the dictionary attribute with the combination of key and values and also display the values using both normal methods and special class methods.	10
	d)	Describe the importance of using sys.modules with examples.	3

OR

4.	a)	Explain with syntax to create a class in Python and also to create an instance of class using python. Give example.	6
	b)	Write a program to handle exception for opening a non-existent file.	5
	c)	Write a program to read a file that is already existing (assume the file sample.py). Perform file operations to indicate the current positon of a file, seeking file pointer position to the end of file and reading last 50 bytes and printing only the last 50 bytes after performing read operation.	9
	d)	Summarize the importance of closing a file.	5

UNIT – III

5.	a)	Elaborate the general rules for constructing Roman numerals.	5
	b)	Express the regular expression to validate both thousand and hundreds place of Numeral. Check the pattern with few options to validate the pattern. What does it return if the pattern accepts or fails? Justify your answer with the output of the pattern.	6
	c)	Discuss the use of {n,m} syntax with example.	6
	d)	Summarize the symbols used for matching a pattern in regular expression.	8

OR

6.	a)	Indicate how to tokenize text into sentences and tokenizing sentences into words using NLTK with example.	8
	b)	Define stopwords. Create a set of all English stopwords and then use it to filter stopwords from a sentence in NLTK with example.	6
	c)	Define stemming. Give example by considering PorterStemmer class also construct your own stemmer using the RegexpStemmer class and display the output of it.	5
	d)	Explain bag of words feature extraction in detail. Give example.	6

UNIT – IV

7.	a)	Express the memory layout of ndarray and list it types.	4
	b)	Describe the universal functions for arrays. Give example.	8
	c)	List and explain the ndarray data type attributes of the Array object.	4
	d)	Indicate the methods that are available for Array conversion. Give example for any two methods.	9

OR

8.	a)	Elaborate the methods available for standard library functions of Array Special methods.	8
	b)	Explain memory-mapped-file arrays with example.	6
	c)	Express character arrays in detail.	6
	d)	Define record arrays. Explain the use of it with example.	5

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