Course Code: 20MC9125 **R20**

SIDDHARTH GROUP OF INSTITUTIONS:: PUTTUR (AUTONOMOUS)
Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK (DESCRIPTIVE)

Subject with Code: Advanced Programming (Python & R Languages) (20MC9125) **Course & Branch**: MCA

Year & Sem: I-MCA & I-Sem **Regulation:** R20

UNIT –I
INTRODUCTION, TYPES, OPERATORS AND EXPRESSIONS

1	**a)**	Describe various features of a python.	[L1][CO1]	**[6M]**
	b)	Explain in brief about the application of python.	[L2][CO1]	**[6M]**
2	**a)**	Describe the need of python.	[L2][CO1]	**[4M]**
	b)	List out various applications of python.	[L1][CO1]	**[8M]**
3		List and explain various data types in python. With example.	[L1][CO1]	**[12M]**
4		Compare and explain the following operators with an example i) Assignment ii) Membership iii) Identify	[L4][CO1]	**[12M]**
5	**a)**	Describe input-output in python with example.	[L1][CO1]	**[7M]**
	b)	Explain indentation with example.	[L2][CO1]	**[5M]**
6	**a)**	Choose various operators of Arithmetic and Comparison.	[L5][CO1]	**[6M]**
	b)	Design a python program to demonstrate logical operator.	[L3][CO1]	**[6M]**
7	**a)**	Explain various conditional statements in python.	[L2][CO1]	**[6M]**
	b)	Develop a python program to find largest of two numbers.	[L6][CO1]	**[6M]**
8		Develop a python program to demonstrate break and continue statements.	[L4][CO1]	**[12M]**
9	**a)**	Demonstrate for and while statements in python with example.	[L2][CO1]	**[6M]**
	b)	Build a python program to check given number is positive or negative or zero.	[L3][CO1]	**[6M]**
10	**a)**	Explain various looping statements in python.	[L2][CO1]	**[6M]**
	b)	Develop a python program to display numbers up to given number.	[L6][CO1]	**[6M]**

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UNIT –II

DATA STRUCTURES, FUNCTIONS

1	**a)**	How can we create and access the list in python.	[L2][CO2]	**[6M]**
	b)	Identify various methods to perform on list.	[L3][CO2]	**[6M]**
2		Compare and explain various data structures in python with examples.	[L5][CO2]	**[12M]**
3	**a)**	How can we create and access the tuple in python.	[L2][CO2]	**[6M]**
	b)	Identify various methods performed on tuple.	[L3][CO2]	**[6M]**
4		Classify various slicing operations on a data structure	[L4][CO2]	**[12M]**
5	**a)**	How can we create and access the set in python.	[L2][CO2]	**[6M]**
	b)	Identify various methods to perform on set.	[L3][CO2]	**[6M]**
6	**a)**	What is a function? Explain how we can create a function.	[L1][CO2]	**[6M]**
	b)	Explain different ways to pass arguments in a function. With example	[L2][CO2]	**[6M]**
7		Distinguish various types of arguments with example program in python.	[L5][CO2]	**[12M]**
8	**a)**	Illustrate the fruitful functions in python with example.	[L3][CO2]	**[6M]**
	b)	Discuss about Anonymous functions in python with an example.	[L2][CO2]	**[6M]**
9		Differentiate and explain local and global variable with an example python program.	[L4][CO2]	**[12M]**
10		Illustrate modules in python with an example	[L3][CO2]	**[12M]**

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UNIT –III

OOP IN PYTHON & ERROR AND EXCEPTIONS

1	**a)**	How a class and an object can can create in python.	[L1][CO3]	**[4M]**
	b)	Create a Student class and initialize it with name and roll number. Design methods for i) Display to display all the information of the student. ii) setAge to set the age of the student. iii) setMarks to assign marks to the student.	[L1][CO3]	**[8M]**
2		Discuss object oriented programming in python with creation of class and object.	[L2][CO3]	**[12M]**
3	**a)**	Illustrate class inheritance in Python with an example	[L2][CO3]	**[6M]**
	b)	Write a python program to find the area of a cone and circle using inheritance.	[L2][CO3]	**[6M]**
4		How do we access parent members in the child class? Explain with an example.	[L6][CO3]	**[12M]**
5	**a)**	Explain encapsulation in python with an example.	[L2][CO3]	**[6M]**
	b)	What is init method in python? Explain with example.	[L2][CO3]	**[6M]**
6		How does inheritance work in python? Explain it with an example.	[L2][CO3]	**[12M]**
7	**a)**	Discuss in detail about polymorphism in python.	[L2][CO3]	**[6M]**
	b)	Explain method overriding in python with an example program.	[L4][CO3]	**[6M]**
8	**a)**	What is an Error? Explain types of errors.	[L2][CO3]	**[6M]**
	b)	Compare and explain various built-in exception in python.	[L4][CO3]	**[6M]**
9		Differentiate error and exception with an example program.	[L4][CO3]	**[12M]**
10	**a)**	Discuss how we can raise an exception.	[L2][CO3]	**[6M]**
	b)	Write a simple program which illustrates Handling Exceptions.	[L4][CO3]	**[6M]**

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UNIT –IV

INTRODUCING R &WORKING WITH OBJECTS

1	**a)**	What are the various Command Packages in R?	[L1][CO3]	**[6M]**
	b)	How to Get Extra Packages of R Commands?	[L2][CO3]	**[6M]**
2	**a)**	What is R? List the features and applications of R.	[L1][CO3]	**[6M]**
	b)	Explain the advantages and disadvantages of R.	[L2][CO3]	**[6M]**
3		Demonstrate the Help Command in R Language.	[L2][CO3]	**[12M]**
4	**a)**	List the functions for reading data into R.	[L1][CO3]	**[6M]**
	b)	List the functions for writing data to files in R.	[L2][CO3]	**[6M]**
5		Illustrate various Mathematical Operations available in R Language. With example.	[L3][CO3]	**[12M]**
6	**a)**	Differentiate between Vector, List, Matrix, and Data frame.	[L4][CO3]	**[4M]**
	b)	What is a vector in R? Explain different ways to create a vector.	[L2][CO3]	**[8M]**
7	**a)**	Identify different ways to select and display parts of a Vector Object.	[L3][CO3]	**[7M]**
	b)	How can we rearrange the items in a vector?	[L2][CO3]	**[5M]**
8	**a)**	Calculate Cumulative Sum of a Numeric Object in R Programming	[L2][CO3]	**[4M]**
	b)	Construct a list data object with an example in R.	[L6][CO3]	**[8M]**
9	**a)**	How do we convert matrix to data frame in R? Explain with example.	[L3][CO3]	**[3M]**
	b)	How do we convert data frame into a matrix? Explain with example	[L3][CO3]	**[9M]**
10		Develop a complicated data object and discuss viewing in that object.	[L6][CO3]	**[12M]**

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UNIT –V

DATA & INTRODUCTION TO GRAPHICAL ANALYSIS

1	**a)**	Categorize Statistic commands that produce a Single Value as a Summary.	[L4][CO5]	**[6M]**
	b)	List out Summary of Commands to Add Names to Rows and Columns of Data Objects	[L1][CO5]	**[6M]**
2	**a)**	Identify and explain various t-test commands in r.	[L3][CO5]	**[6M]**
	b)	Discuss Two-Sample t-Test with Unequal and Equal Variance.	[L2][CO5]	**[6M]**
3	**a)**	Why we use Wilcoxon U-Test? Identify the commands in it.	[L4][CO5]	**[6M]**
	b)	Discuss Two-Sample and One-Sample in U-Test.	[L2][CO5]	**[6M]**
4		Choose the following data2 **> data2** 3 5 7 5 3 2 6 8 5 6 9 4 5 7 3 4 Find the following by using summary statistics commands i) Average of the sample ii) Largest value in the sample iii) Smallest value in the sample iv) How many items are in the sample v) Look at a different data sample	[L5][CO5]	**[12M]**
5	**a)**	Describe various commands of Cumulative measures in R.	[L2][CO5]	**[6M]**
	b)	Calculate the cumulative values for the following sample data a <- c(1:9,4,2,4,5:2)	[L3][CO5]	**[6M]**
6	**a)**	Explain the importance of bar charts with examples.	[L5][CO5]	**[6M]**
	b)	Discuss Line charts using numeric data.	[L2][CO5]	**[6M]**
7	**a)**	Differentiate Plots and Charts in the Graphical Analysis.	[L4][CO5]	**[6M]**
	b)	Draw a pie chart for the following data	[L1][CO5]	**[6M]**

Section	I	II	III	IV	V
No.of workers	220	370	190	70	250

8		Identify and explain various types of Graphical Data Analysis.	[L3][CO5]	**[12M]**
9		Explain different ways to copy graphics to other applications.	[L2][CO5]	**[12M]**
10		Explain different ways to create several graphs in one window.	[L6][CO5]	**[12M]**

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