

**TILAK MAHARASHTRA VIDYAPEETH, PUNE**  
**MASTER OF COMPUTER APPLICATIONS**  
**(Specialization in Data Science)**  
**EXAMINATION :MAY - 2024**  
**SEMESTER - II**  
**Sub:R Programming for Data Science (MCDS23-205)**

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**Date :27/05/2024**                      **Total Marks :60**                      **Time: 10.00 am to 12.30 pm**

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**Instruction:**

1. All questions are compulsory unless and otherwise stated.
2. Bold figures to the right of every question are the maximum marks for that question.
3. Candidates are advised to attempt questions in order.
4. Answers written illegibly are likely to be marked zero.
5. Use of scientific calculators, Log tables, Mollier Charts is allowed.
6. Draw neat and labelled diagram wherever necessary.

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**Q.1. Answer the following in 2-3lines. (Any 5) (10)**

1. Define repeat statement in R.
2. Define R list.
3. How will you read a excel file in R?
4. Define summary () function.
5. What is Hypothesis?
6. Write a R code to create simple line chart.
7. What is array? Write syntax of array.

**Q. 2. Answer the following in short. (Any 4) (20)**

1. Differentiate between R Programming and Python Programming
2. Explain the functioning of lapply() and sapply() in a R program with one example
3. Write a R program to take input from the user (name and age) and display the values.
4. How to create contingency tables from given vectors?

Define AM. Write a R code to calculate AM for the following data:

Class	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	8	11	9	10	12	13

6. What is dot chart? Write R code to create simple dot chart.

**Q. 3. Answer the following in detail. (Any 3) (30)**

1. Write R function to check whether the given number is prime or not
2. Define dataframe? Perform the following operation in dataframe:
  - a) add a new column in a given data frame.
  - b) add new row(s) to an existing data frame.
  - c) to drop column(s) by name from a given data frame
  - d) to drop row(s) by number from a given data frame
3. Explain any five-string manipulation function used in R.
4. What is Z-test? Explain in details one sample Z-test and two sample Z-test with example.
5. a) Define bar chart. Write a R code to create bar chart.  
b) Explain histogram. Write a R code to create histogram.

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