**Programming with R**

**This is a sample question paper. You should be able to answer the paper in less than 2 hours.**

1. “Bombay is a city in Maharashtra state. Bombay is the state capital”. Use an appropriate function to replace Bombay as Mumbai.
2. Convert the characters in the above example to upper case?
3. Six students are from one of the following cities – Bangalore, Chennai and Hyderabad. Create a factor vector showing the cities for the six students. How will you check the data type?
4. Create two matrices of size 2X2 and 2X3 using a sequence of numbers and multiply both. Label the rows of the matrix obtained.
5. How will you examine the first few rows and the structure of the in-built iris dataset?
6. Export the in-built iris dataset to your working directory as a .csv file. Import the file from the working directory into the environment under the name *myiris*.
7. Change the data type of the variable species in the *myiris* data frame to a character.
8. Create a data frame *employeedf* for four employees from three vectors which show their Name, Department and Salary. (Use imaginary names and values to create the three vectors)
9. Create a new data frame consisting of employee name and age for the same four employees. Merge this data frame with *employeedf* to create a new*employeedf* data frame.
10. Answer the below questions using the Placement data file. Use the functions of dplyr only.
11. How will you filter students from Commerce and Management (Comm&Mgmt) degree having degree percentage (degree\_p) ≥ 80. Create a dataset named *studplyr* using these observations. How many observations are there?
12. Reorder (ascending) the rows in stu*dplyr* based on ssc\_p. What is the sl.no of the student at the top and bottom?
13. How will you select columns that contains “\_”? Which columns got selected?
14. Create a new variable which shows the total percentage of ssc\_p and hsc\_p. What is the percentage of the first student in the output?
15. Answer the below questions using the Placement data file provided to you. Use the ggplot2 package only.
16. Draw a scatter plot between any two numeric variables. Introduce an additional dimension of gender using the color attribute.
17. Draw a bar chart to show levels under workex. Convert the bars into a stack based on gender.
18. Draw a histogram for any numeric variable.
19. Create a .csv file for the below information and plot a line chart for nifty.

|  |  |  |  |
| --- | --- | --- | --- |
| **month** | **value** | **month** | **value** |
| 1 | 100 | 7 | 175 |
| 2 | 120 | 8 | 225 |
| 3 | 160 | 9 | 180 |
| 4 | 130 | 10 | 225 |
| 5 | 170 | 11 | 300 |
| 6 | 200 | 12 | 250 |