

## R Programming Exam

1. Why R-programming language?
2. What are the applications of R-programming language?
3. Explain about data types in R programming. With an examples
4. Explain about sub setting methods in R programming
5. Write R program to demonstrate working with operators (arithmetic, logical, relational and , assignment operators).
6. Compare R programming and Python.
7. Write a while control structure in a R programming with an example?
8. Write a short notes on built in functions in R programming?
9. How to declare the date and time functions in R programming?
10. How to find the length of a vector with an example.
11. **x<- ("A","B","C")**  
**is.numeric**  
**(x)** Write the output with explanation
12. How to deleting elements of a matrices and arrays.
13. Explain about types of vectors with an examples in R programming.
14. Write a program to create a matrix using cbind() and rbind() functions
15. Define the list. give an examples and How to create the list in R programming?
16. How to find the size of a list with an example?
17. How to create matrix in R programming?
18. Define the factors. give an example and How to create and access components of a factor.
19. Define Strips Charts with an example
20. What is dplyr() function? List out the performance of R -dplyr package.
21. a What will be the output of the following R function?  
**paste("Everybody", "is", "a", "warrior")**  
 b What will be the output of the following R function?  
**cat("Everybody", "is", "a", "warrior",sep="\*")**
22. What will be the output of the following R function?  
 a. **d <- diag(5, nrow=2, ncol=2)**  
 b. **Sys.Date()** and **Sys.time()**  
 c. **> x <- 1:3; > y <- 10:12; > rbind(x, y)**

23. What will be the output of the following R code?
- ```
> x <- list(1, "a", TRUE, 1 + 4i); > x
x <- vector("list", length = 5); > x
> x <- factor(c("yes", "yes", "no", "yes", "no"))
> table(x)
> m <- matrix(1:4, nrow = 2, ncol = 2)
> dimnames(m) <- list(c("a", "b"), c("c", "d"))
> m
```
24. What will be the output of the following R code?
- ```
> x <- 1:4
> y <- 6:9
> z <- x + y
> z
```
  - ```
> x <- 1:4
> x > 2
```
  - ```
> x <- matrix(1:4, 2, 2)
> y <- matrix(rep(10, 4), 2, 2)
> x * y
```
  - ```
> x <- as.Date("2012-03-01")
> y <- as.Date("2012-02-28")
> x-y
```
25. What will be the output of the following R code?
- ```
> x <- as.POSIXct("2012-10-25 01:00:00")
```
  - ```
> y <- as.POSIXct("2012-10-25 06:00:00", tz = "GMT")
```
  - ```
> y-x
result <- hist(temperatures,
main = "Histogram of Temperature",
xlab = "Temperature in degrees Fahrenheit",
col = "red",
xlim = c(50,100),
ylim = c(0, 5))
print(result)
```

1. Write about Scatter Plot and Histogram with R examples. Explain its importance in graphical display of statistical data. Give appropriate examples
2. What is a Box Plot? Describe the components of a Box Plot. Construct Box Plot for the following data with R code 100,95,93, 100,92,95, 99,100, 58, 75,78,45, 66,89,93 Construct the Box Plot components for the above data
3. Write a R program to find the maximum and the minimum value of a given vector. Explain the functions with syntax.
4. i. Illustrate the usage of all logical operator in R. ii. Explain the use of length () and mean() function
5. Perform the following operation in data frame:
  - a. Write a R program to add a new column in a given data frame.
  - b. Write a R program to add new row(s) to an existing data frame.
  - c. Write a R program to drop column(s) by name from a given data frame.
  - d. Write a R program to drop row(s) by number from a given data frame.
  - e. Write a R program to create inner, outer, left, right join(merge) from given two data frames
6. Write a R program to get the length of the first two vectors of a given list. g1=1:10,g2="R Program",g3="HTML".
7. Create the dataframe data <- data.frame(x1 = 1:6, x2 = c(1, 2, 2, 3, 1, 2), x3 = c("F", "B", "C", "E", "A", "D"))  
Use the following functions
  - a. Arrange function      b. Filter function      c. Mutate function
  - d. Pull function      e. Rename function      f. Sample(n) function
  - g. Select function
8. What will be the output of the following R code?  
x<-c(2, 4, 6, 8); y<-c(1, 3, 5, 7); plot(x,y
9. Give an example program for two data visualization concepts
10. Give an example program for two data structure concepts