Q. What are packages?

A. R packages are a collection of functions and sample data
library() - Gives list of all available packages
install.packages() - To install a new package manually

Q. How to implement a package

A. Using keyword library(“RMySQL”)

Q. Difference between list and vector

A.

- A list holds different data such as Numeric, Character, logical, etc. Vector stores elements of the same type or converts implicitly.
- Lists are recursive, whereas vectors are not.
- The vector is one-dimensional, whereas the list is a multidimensional object.

Q. Difference between matrix and array

A.

Arrays	Matrices
Arrays can contain greater than or equal to 1 dimension.	Matrices contain 2 dimensions in a table like structure.
Array is a homogeneous data structure.	Matrix is also a homogeneous data structure.
It is a singular vector arranged into the specified dimensions.	It comprises multiple equal length vectors stacked together in a table.
array() function can be used to create a matrix by specifying the third dimension to be 1.	matrix() function however can be used to create at most 2-dimensional arrays.
Arrays are superset of matrices.	Matrices are a subset, special case of an array where dimensions are two.
Limited set of collection-based operations.	Wide range of collection operations possible.
Mostly, intended for storage of data.	Mostly, matrices are intended for data transformation.

Q. Initialization syntax of matrix

A. matrix(data, nrow, ncol, byrow, dimnames)

Q. Mean of a list

A. mean(data)

Q. How to remove Null character in list

A. `x<-x[!sapply(x,is.null)]`

Q. What is Data frame

A. Data frames are table-like data structures. Each column contains values of each variable. Each row contains one set of values related to each column. The column names are non-empty. The row names should be unique.

Syntax: `varName <- data.frame(values)`

Q. Subset in data frame

A. `subset(values, subsetexpression, select, drop = FALSE, ...)`

Q. How to connect mysql to r

A.

```
library(RMySQL)
connectDB <- function(dbName, hostName, userName)
{
sqlConnection = NULL
Result = tryCatch({
sqlConnection <- dbConnect(MySQL(), dbname = dbName, host =
hostName, user = userName, password = .rs.askForPassword("Enter
Password: "))
```

```
},

warning = function(w) {
print("Warning")
suppressWarnings()
},

error = function(e) {
print ("Error" + e)
},

finally = {
print("Connected")
})

return sqlConnection
```

Q. What is rbind and cbind

A. If you want to have multiple vectors combined together to create a 2-dimensional space with rows and columns, we can use the rbind() and cbind() functions. This new object is called a matrix. rbind() stands for row bind and cbind() stands for column bind.

```
> matrix.r <- rbind(c(1, 2, 3, 4), c(5, 6, 7, 8), c(9, 10, 11,
12), c(13, 14, 15, 16))
> matrix.r
     [,1] [,2] [,3] [,4]
[1,]    1    2    3    4
[2,]    5    6    7    8
[3,]    9   10   11   12
[4,]   13   14   15   16
> matrix.c <- cbind(c(1, 2, 3, 4), c(5, 6, 7, 8), c(9, 10, 11,
12), c(13, 14, 15, 16))
```

```
> matrix.c
     [,1] [,2] [,3] [,4]
[1,]    1    5    9   13
[2,]    2    6   10   14
[3,]    3    7   11   15
[4,]    4    8   12   16
```

Q. What is Shiny package

A. Shiny is an R package that makes it easy to build interactive web apps straight from R. You can host standalone apps on a webpage or embed them in R Markdown documents or build dashboards. You can also extend your Shiny apps with CSS themes, htmlwidgets, and JavaScript actions.

Q. What is Class

A. Class is the blueprint that helps to create an object and contains its member variable along with the attributes.

Q. Data set

A. Dataset in R is defined as a central location in the package in RStudio where data from various sources are stored, managed and available for use.

Q. Are lists homogeneous or heterogeneous?

A. Heterogeneous

Q. Declare a list

A. `listName <- list(values)`

Q. How to find the sum of vectors

A.

```
sum(x)
sum(x, y, z)
sum(x, na.rm=TRUE) #To ignore NA
```

Q. How to remove null from a vector

A.

```
vector[!is.na(vector)]
sum(vector, na.rm = TRUE)
na.omit(vector)
```

Q. What is the difference between Csv and csv2

A. write. csv uses "." for the decimal point and a comma for the separator. write. csv2 uses a comma for the decimal point and a semicolon for the separator, the Excel convention for CSV files in some Western European locales.

Q. apply(), lapply(), sapply()

A. apply() takes Data frame or matrix as an input and gives output in vector, list or array. Apply function in R is primarily used to avoid explicit uses of loop constructs. It is the most basic of all collections can be used over a matrice.

lapply() function is useful for performing operations on list objects and returns a list object of same length of original set. lappy() returns a list of the similar length as input list object, each element of which is the result of applying FUN to the corresponding element of list. Lapply in R takes list, vector or data frame as input and gives output in list.

sapply() function takes list, vector or data frame as input and gives output in vector or matrix. It is useful for operations on list objects and returns a list object of same length of original set. Sapply function in R does the same job as lapply() function but returns a vector.