

SHRIMATI INDIRA GANDHI COLLEGE

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QUESTION BANK

PROBLEM SOLVING USING R



**DEPARTMENT OF COMPUTER SCIENCE, INFORMATION
TECHNOLOGY AND COMPUTER APPLICATIONS**



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SHRIMATI INDIRA GANDHI COLLEGE,

TIRUCHIRAPPALLI - 2

PROBLEM SOLVING USING R

UNIT I

What is the primary programming language used in R?

- a) Python
- b) Java
- c) R
- d) C++

Which of the following is a basic feature of R?

- a) Object-oriented programming
- b) Automatic memory management
- c) Multithreading support
- d) Static typing

Which pane in the R console displays the results of executed commands?

- a) Console pane
- b) Editor pane
- c) Help pane
- d) Plot pane

What is the purpose of comments in R code?

- a) To add explanations and documentation
- b) To disable a line of code temporarily
- c) To specify the data type of a variable
- d) To highlight syntax errors

How can you install a package in R?

- a) Using the `install.packages()` function
- b) Using the `load.packages()` function
- c) Using the `import.packages()` function
- d) Using the `require.packages()` function

Where can you find help files and function documentation in R?

- a) R website
- b) Package documentation
- c) RStudio IDE
- d) CRAN repository

How can you save your work and exit R?

- a) Using the `save()` function
- b) Using the `quit()` function
- c) Using the `exit()` function
- d) Using the `close()` function

Which of the following is a valid naming convention in R?

- a) `variable-name`
- b) `VariableName`
- c) `variable_name`
- d) `1variable`

Which mathematical operation is performed by the ^ operator in R?

- a) Addition
- b) Subtraction
- c) Multiplication
- d) Exponentiation

What does the function log10() compute in R?

- a) Natural logarithm
- b) Base 10 logarithm
- c) Exponential function
- d) Square root

How can you assign a value to an object in R?

- a) Using the = operator
- b) Using the <- operator
- c) Using the -> operator
- d) Using the == operator

What is the data structure used to store multiple values of the same type in R?

- a) Array
- b) List
- c) Data frame
- d) Vector

How can you create a vector in R?

- a) Using the c() function
- b) Using the vector() function
- c) Using the list() function
- d) Using the array() function

Which function is used to generate sequences of numbers in R?

- a) seq()
- b) rep()
- c) sort()
- d) length()

What is the characteristic of vector-oriented behavior in R?

- a) Operations are applied element-wise
- b) Operations are applied to the entire vector
- c) Operations can only be applied to numeric vectors
- d) Operations require explicit loops for processing

Answers

1. c) R

2. b) Automatic memory management

3. a) Console pane

4. a) To add explanations and documentation

5. a) Using the `install.packages()` function

6. b) Package documentation

7. b) Using the `quit()` function

8. b) `VariableName`

9. d) Exponentiation

10. b) Base 10 logarithm

11. b) Using the `<-` operator

12. d) Vector

13. a) Using the `c()` function

14. a) `seq()`

15. a) Operations are applied element-wise

1. Which function is used to check the documentation and examples for a specific R function?

- a) help()
- b) doc()
- c) info()
- d) man()

2. How can you create a new R script file in RStudio?

- a) File -> New Script
- b) Edit -> New Script
- c) Tools -> New Script
- d) View -> New Script

3. What is the purpose of the command `sessionInfo()` in R?

- a) Displays information about the current R session
- b) Retrieves information from an external data source
- c) Prints the contents of a data frame
- d) Checks for errors and warnings in the code

4. How can you check the current working directory in R?

- a) dir()
- b) pwd()
- c) getwd()
- d) cwd()

5. Which function is used to remove an object from the R workspace?

- a) `remove()`
- b) `delete()`
- c) `clear()`
- d) `unload()`

6. What is the purpose of the function `length()` in R?

- a) Returns the number of rows in a data frame
- b) Calculates the length of a vector or list
- c) Computes the sum of all elements in a vector
- d) Finds the maximum value in a numeric vector

7. Which of the following is an example of a logical operator in R?

- a) `%in%`
- b) `<-`
- c) `&&`
- d) `~`

8. What is the default behavior of the assignment operator in R?

- a) Overwrites the existing object with the new value
- b) Appends the new value to the existing object
- c) Creates a new object with the assigned value
- d) Throws an error if the object already exists

9. How can you concatenate two vectors in R?

- a) Using the + operator
- b) Using the append() function
- c) Using the merge() function
- d) Using the c() function

10. Which function is used to sort a vector in ascending order in R?

- a) sort()
- b) order()
- c) rank()
- d) arrange()

11. What is the purpose of the function `head()` in R?

- a) Returns the first few rows of a data frame or matrix
- b) Calculates the mean of a numeric vector
- c) Extracts a subset of elements from a vector
- d) Checks if a value is present in a vector

12. Which function is used to extract a specific element from a vector in R?

- a) subset()
- b) extract()
- c) slice()
- d) []

13. What is the result of the expression `3:8` in R?

- a) 3, 4, 5, 6, 7, 8
- b) 3, 5, 7
- c) 8, 7, 6, 5, 4, 3
- d) 3.8

14. Which function is used to calculate the mean of a numeric vector in R?

- a) mean()
- b) sum()
- c) median()
- d) var()

15. What is the purpose of the function `rep()` in R?

- a) Replicates elements in a vector or list
- b) Replaces missing values with a specified value
- c) Reorders the elements of a vector
- d) Removes duplicate elements from a vector

Answers

1. a) help()

2. a) File -> New Script

3. a) Displays information about the current R session

4. c) `getwd()`

5. a) `remove()`

6. b) Calculates the length of a vector or list

7. c) `&&`

8. c) Creates a new object with the assigned value

9. d) Using the `c()` function

10. a) `sort()`

11. a) Returns the first few rows of a data frame or matrix

12. d) `[]`

13. a) 3, 4, 5, 6, 7, 8

14. a) `mean()`

15. a) Replicates elements in a vector or list

UNIT II

1. What is a matrix in R?

- a) A one-dimensional array
- b) A two-dimensional array
- c) A collection of data frames
- d) A statistical model

2. How can you define a matrix in R using the `matrix()` function?

- a) `matrix(data)`
- b) `matrix(data, nrow)`
- c) `matrix(data, ncol)`
- d) `matrix(data, nrow, ncol)`

3. Which argument in the `matrix()` function determines the direction of filling the elements?

- a) `byrow`
- b) `bycolumn`
- c) `fill`
- d) `direction`

4. How can you bind two matrices by rows in R?

- a) `bind_rows()`
- b) `rbind()`
- c) `row_bind()`
- d) `merge()`

5. What does the `dim()` function return in R?

- a) Number of rows in a matrix
- b) Number of columns in a matrix
- c) Dimensions of a matrix
- d) Data type of a matrix

6. How can you subset a specific row in a matrix in R?

- a) `matrix[row,]`
- b) `matrix[, row]`
- c) `matrix[row]`
- d) `matrix[row, col]`

7. How can you extract a specific column from a matrix in R?

- a) `matrix[row,]`
- b) `matrix[, col]`
- c) `matrix[col]`
- d) `matrix[row, col]`

8. How can you extract the main diagonal elements of a matrix in R?

- a) `diag(matrix)`
- b) `main_diag(matrix)`
- c) `matrix[diag]`
- d) `matrix[main_diag]`

9. What happens when you omit a dimension while defining a matrix in R?

- a) R throws an error
- b) R automatically assigns a value of 1 to the omitted dimension
- c) R automatically assigns a value of 0 to the omitted dimension
- d) R automatically assigns a value of NA to the omitted dimension

10. How can you perform matrix addition in R?

- a) `add()`
- b) `plus()`
- c) `matrix_add()`
- d) `+`

11. How can you perform matrix multiplication in R?

- a) `multiply()`
- b) `matmul()`
- c) `matrix_mult()`
- d) `%*%`

12. What is the result of multiplying a matrix by its inverse in R?

- a) The identity matrix
- b) A zero matrix
- c) A matrix with all elements equal to 1
- d) An empty matrix

13. How can you transpose a matrix in R?

- a) `transpose()`
- b) `transp()`
- c) `matrix_transpose()`
- d) `t()`

14. What is an identity matrix in R?

- a) A matrix with all elements equal to 1
- b) A matrix with all elements equal to 0
- c) A matrix with ones on the main diagonal and zeros elsewhere
- d) A matrix with zeros on the main diagonal and ones elsewhere

15. How can you perform matrix subtraction in R?

- a) `subtract()`
- b) `minus()`
- c) `matrix_subtract()`
- d) `-`

16. How can you create a multidimensional array in R?

- a) `array()`
- b) `matrix()`
- c) `list()`
- d) `data.frame()`

17. How can you extract a subset of elements from a multidimensional array in R?

- a) `array_subset()`
- b) `subset()`
- c) `extract()`
- d) `[]`

18. How can you replace specific elements in a matrix with new values in R?

- a) `replace()`
- b) `modify()`
- c) `assign()`
- d) `[]`

19. What does the function `rowMeans()` do in R?

- a) Calculates the mean of each row in a matrix
- b) Calculates the mean of each column in a matrix
- c) Calculates the sum of each row in a matrix
- d) Calculates the sum of each column in a matrix

20. How can you calculate the determinant of a matrix in R?

- a) `determinant()`
- b) `det()`
- c) `matrix_det()`
- d) `diag()`

21. How can you calculate the inverse of a matrix in R?

- a) `inverse()`
- b) `inv()`
- c) `matrix_inv()`
- d) `solve()`

22. How can you calculate the element-wise product of two matrices in R?

- a) `element_product()`
- b) `mult()`
- c) `matrix_mult()`
- d) `*`

23. What does the function `array()` do in R?

- a) Creates a matrix with predefined values
- b) Creates a vector with predefined values
- c) Creates a multidimensional array with predefined values
- d) Creates a list with predefined values

24. How can you extract a specific slice from a multidimensional array in R?

- a) `array_slice()`
- b) `slice()`
- c) `extract_slice()`
- d) `[]`

25. How can you replace specific elements in a multidimensional array with new values in R?

- a) `replace()`
- b) `modify()`
- c) `assign()`
- d) `[]`

26. How can you calculate the sum of all elements in a matrix in R?

- a) `sum(matrix)`
- b) `total(matrix)`
- c) `matrix_sum(matrix)`
- d) `apply(matrix, sum)`

27. What is the result of dividing a matrix by its transpose in R?

- a) A symmetric matrix
- b) A diagonal matrix
- c) A zero matrix
- d) An identity matrix

28. How can you calculate the cross product of two vectors in R?

- a) `cross_product()`
- b) `prod()`
- c) `matrix_prod()`
- d) `cross()`

29. How can you find the maximum value in a matrix in R?

- a) `max(matrix)`
- b) `maximum(matrix)`
- c) `matrix_max(matrix)`
- d) `apply(matrix, max)`

30. How can you calculate the sum of each column in a matrix in R?

- a) `colSums(matrix)`
- b) `columnSums(matrix)`
- c) `matrix_sum(matrix)`
- d) `apply(matrix, sum, 2)`

Answers

1. b) A two-dimensional array
2. d) `matrix(data, nrow, ncol)`
3. a) `byrow`
4. b) `rbind()`
5. c) Dimensions of a matrix
6. a) `matrix[row,]`
7. b) `matrix[, col]`
8. a) `diag(matrix)`
9. b) R automatically assigns a value of 1 to the omitted dimension
10. d) `+`
11. d) `%*%`
12. a) The identity matrix

- 13. d) `t()`
- 14. c) A matrix with ones on the main diagonal and zeros elsewhere
- 15. d) -
- 16. a) `array()`
- 17. d) `[]`
- 18. d) `[]`
- 19. a) Calculates the mean of each row in a matrix
- 20. b) `det()`
- 21. d) `solve()`
- 22. d) *
- 23. c) Creates a multidimensional array with predefined values
- 24. d) `[]`
- 25. d) `[]`
- 26. a) `sum(matrix)`
- 27. a) A symmetric matrix
- 28. d) `cross()`
- 29. a) `max(matrix)`
- 30. a) `colSums(matrix)`

UNIT III

- 1. In R, what values can logical variables have?
 - a) TRUE and FALSE
 - b) 0 and 1
 - c) Yes and No
 - d) On and Off

2. Which operator is used to test for equality in R?

a) ==

b) =

c) !=

d) <=

3. Which operator is used to test for inequality in R?

a) !=

b) <>

c) ~=

d) >

4. How can you create a character variable in R?

a) char()

b) create.character()

c) character()

d) string()

5. How can you concatenate two strings in R?

a) concat()

b) merge()

c) str_c()

d) str_concat()

6. What is the escape sequence for a newline character in R?

- a) \n
- b) \r
- c) \t
- d) \\

7. How can you extract a substring from a character variable in R?

- a) substring()
- b) extract()
- c) str_extract()
- d) []

8. What is a factor in R?

- a) A categorical variable
- b) A continuous variable
- c) A binary variable
- d) A numeric variable

9. How can you convert a character variable to a factor in R?

- a) as.factor()
- b) convert.factor()
- c) to_factor()
- d) make_factor()

10. How can you identify the unique categories in a factor variable in R?

- a) `unique()`
- b) `distinct()`
- c) `levels()`
- d) `categories()`

11. How can you define and order levels in a factor variable in R?

- a) `factor_order()`
- b) `order_levels()`
- c) `reorder()`
- d) `levels_order()`

12. How can you combine two factor variables in R?

- a) `combine()`
- b) `merge()`
- c) `factor_combine()`
- d) `c()`

13. How can you cut a numeric variable into discrete intervals in R?

- a) `cut()`
- b) `divide()`
- c) `bin()`
- d) `slice()`

14. What is the purpose of the function `levels()` in R?

- a) Returns the categories of a factor variable
- b) Returns the levels of a numeric variable
- c) Returns the unique values of a character variable
- d) Returns the order of levels in a factor variable

15. How can you check if two character variables are equal in R?

- a) `equals()`
- b) `identical()`
- c) `==`
- d) `compare()`

16. What does the function `nchar()` do in R?

- a) Returns the number of characters in a string
- b) Returns the number of elements in a vector
- c) Returns the number of levels in a factor variable
- d) Returns the number of rows in a data frame

17. How can you convert a character variable to uppercase in R?

- a) `to_upper()`
- b) `upper()`
- c) `str_to_upper()`
- d) `toupper()`

18. How can you find the position of a substring within a character variable in R?

- a) `str_pos()`
- b) `find_pos()`
- c) `str_locate()`
- d) `position()`

19. How can you convert a factor variable to a character variable in R?

- a) `as.character()`
- b) `convert.character()`
- c) `to_character()`
- d) `make_character()`

20. What is the purpose of the function `paste()` in R?

- a) Concatenates strings
- b) Converts a factor variable to character representation
- c) Reorders the levels of a factor variable
- d) Cuts a numeric variable into intervals

21. How can you test if a value is present in a character vector in R?

- a) `is_present()`
- b) `in_vector()`
- c) `%in%`
- d) `check()`

22. How can you replace specific elements in a character vector with new values in R?

- a) `replace()`
- b) `modify()`
- c) `assign()`
- d) `[]`

23. What does the function `grep()` do in R?

- a) Checks if a pattern matches a string
- b) Searches for a substring in a string
- c) Returns the number of occurrences of a pattern in a string
- d) Converts a logical vector to a character vector

24. How can you count the occurrences of a specific character in a character variable in R?

- a) `count_chars()`
- b) `char_count()`
- c) `str_count()`
- d) `count()`

25. How can you convert a character variable to lowercase in R?

- a) `to_lower()`
- b) `lower()`
- c) `str_to_lower()`
- d) `tolower()`

26. What is the purpose of the function `strsplit()` in R?

- a) Splits a string into substrings based on a specified delimiter
- b) Searches for a pattern in a string and replaces it with a new value
- c) Converts a character vector to a factor variable
- d) Returns the position of a substring within a string

27. How can you extract the first n characters from a character variable in R?

- a) `str_extract()`
- b) `substr()`
- c) `extract_chars()`
- d) `[]`

28. How can you check if a string starts with a specific substring in R?

- a) `starts_with()`
- b) `str_starts()`
- c) `substr()`
- d) `str_detect()`

29. What is the purpose of the function `toupper()` in R?

- a) Converts a character variable to uppercase
- b) Converts a numeric variable to uppercase
- c) Returns the total number of uppercase characters in a string
- d) Returns the position of the first uppercase character in a string

30. How can you extract a specific range of characters from a character variable in R?

- a) `str_extract()`
- b) `substr()`
- c) `extract_chars()`
- d) `[]`

Answers

- 1. a) TRUE and FALSE
- 2. a) `==`
- 3. a) `!=`
- 4. c) `character()`
- 5. c) `str_c()`
- 6. a) `\n`
- 7. a) `substring()`
- 8. a) A categorical variable
- 9. a) `as.factor()`
- 10. c) `levels()`
- 11. c) `reorder()`
- 12. d) `c()`
- 13. a) `cut()`
- 14. a) Returns the categories of a factor variable
- 15. c) `==`
- 16. a) Returns the number of characters in a string
- 17. d) `toupper()`
- 18. c) `str_locate()`

- 19. a) `as.character()`
- 20. a) Concatenates strings
- 21. c) `%in%`
- 22. d) `[]`
- 23. a) Checks if a pattern matches a string
- 24. c) `str_count()`
- 25. d) `tolower()`
- 26. a) Splits a string into substrings based on a specified delimiter
- 27. b) `substr()`
- 28. a) `starts_with()`
- 29. a) Converts a character variable to uppercase
- 30. b) `substr()`

UNIT IV

- 1. In R, which data structure allows you to store objects of different types together?
 - a) Vectors
 - b) Matrices
 - c) Lists
 - d) Data frames

- 2. How can you access a specific component within a list in R?
 - a) `list$component_name`
 - b) `list[component_name]`
 - c) `list[[component_name]]`
 - d) `list@component_name`

3. How can you assign a name to an object in R?

- a) `object_name <- "name"`
- b) `name(object_name) <- "name"`
- c) `assign(object_name, "name")`
- d) `names(object_name) <- "name"`

4. What is nesting in the context of lists in R?

- a) Storing multiple lists within a single list
- b) Storing vectors within a list
- c) Storing matrices within a list
- d) Storing data frames within a list

5. What is a data frame in R?

- a) A structure for storing numeric data
- b) A structure for storing character data
- c) A structure for storing lists
- d) A structure for storing tabular data

6. How can you add a new data column to an existing data frame in R?

- a) `df$new_column <- values`
- b) `df$add_column(new_column, values)`
- c) `df <- add_column(df, new_column, values)`
- d) `add_column(df, new_column, values)`

7. How can you combine two data frames by row in R?

- a) `row_combine(df1, df2)`
- b) `rbind(df1, df2)`
- c) `combine_rows(df1, df2)`
- d) `bind_rows(df1, df2)`

8. How can you create a logical subset of a data frame in R based on a condition?

- a) `subset(df, condition)`
- b) `filter(df, condition)`
- c) `select(df, condition)`
- d) `logical_subset(df, condition)`

9. What special value in R represents infinity?

- a) `Inf`
- b) `-Inf`
- c) `NaN`
- d) `NA`

10. What special value in R represents undefined or missing values?

- a) `Inf`
- b) `-Inf`
- c) `NaN`
- d) `NA`

11. What special value in R represents a missing value?

- a) Inf
- b) -Inf
- c) NaN
- d) NA

12. What is an attribute in R?

- a) Additional metadata associated with an object
- b) A mathematical property of an object
- c) A specific value within an object
- d) A sub-component of an object

13. How can you check the class of an object in R?

- a) `class(obj)`
- b) `typeof(obj)`
- c) `typeof_class(obj)`
- d) `obj.class()`

14. What does the "is" function in R do?

- a) Checks if an object is equal to another object
- b) Checks if an object is of a specific class
- c) Checks if an object is NULL
- d) Checks if an object is a factor

15. What does the dot object represent in R?

- a) The current working directory
- b) The last executed command
- c) The missing value placeholder
- d) The output of the previous function

16. How can you check if an object is a function in R?

- a) `is.function(obj)`
- b) `is.func(obj)`
- c) `typeof(obj) == "function"`
- d) `obj.is_function()`

17. How can you perform argument checking within a function in R?

- a) `check_args()`
- b) `verify_args()`
- c) `assert_args()`
- d) `stopifnot()`

18. What does the `as.character()` function do in R?

- a) Converts an object to a character vector
- b) Converts an object to a numeric vector
- c) Converts an object to a factor
- d) Converts an object to a logical vector

19. How can you check if an object is NULL in R?

- a) `is.null(obj)`
- b) `obj == NULL`
- c) `obj.is_null()`
- d) `typeof(obj) == "NULL"`

20. What does the `as.numeric()` function do in R?

- a) Converts an object to a numeric vector
- b) Converts an object to a character vector
- c) Converts an object to a factor
- d) Converts an object to a logical vector

21. How can you convert a numeric vector to a factor in R?

- a) `as.factor()`
- b) `convert_factor()`
- c) `to_factor()`
- d) `make_factor()`

22. What does the `as.logical()` function do in R?

- a) Converts an object to a logical vector
- b) Converts an object to a numeric vector
- c) Converts an object to a character vector
- d) Converts an object to a factor

23. How can you check if an object is numeric in R?

- a) `is.numeric(obj)`
- b) `obj.is_numeric()`
- c) `typeof(obj) == "numeric"`
- d) `is.num(obj)`

24. How can you check if an object is a data frame in R?

- a) `is.dataframe(obj)`
- b) `obj.is_dataframe()`
- c) `typeof(obj) == "data.frame"`
- d) `is.frame(obj)`

25. How can you convert a factor to a character vector in R?

- a) `as.character()`
- b) `convert_character()`
- c) `to_character()`
- d) `make_character()`

26. What does the `attributes()` function do in R?

- a) Returns the attributes of an object
- b) Sets new attributes for an object
- c) Deletes attributes from an object
- d) Checks if an object has attributes

27. How can you check if an object is a character vector in R?

- a) `is.character(obj)`
- b) `obj.is_character()`
- c) `typeof(obj) == "character"`
- d) `is.char(obj)`

28. What does the `as.factor()` function do in R?

- a) Converts an object to a factor
- b) Converts an object to a numeric vector
- c) Converts an object to a character vector
- d) Converts an object to a function

29. How can you check if an object is a factor in R?

- a) `is.factor(obj)`
- b) `obj.is_factor()`
- c) `typeof(obj) == "factor"`
- d) `is.fact(obj)`

30. How can you coerce an object to a specific class in R?

- a) `coerce_class()`
- b) `as.class()`
- c) `to_class()`
- d) `class(obj) <- "class"`

Answers

1. c) Lists
2. c) `list[[component_name]]`
3. b) `name(object_name) <- "name"`
4. a) Storing multiple lists within a single list
5. d) A structure for storing tabular data
6. a) `df$new_column <- values`
7. d) `bind_rows(df1, df2)`
8. b) `filter(df, condition)`
9. a) `Inf`
10. d) `NA`
11. d) `NA`
12. a) Additional metadata associated with an object
13. a) `class(obj)`
14. b) Checks if an object is of a specific class
15. c) The missing value placeholder
16. a) `is.function(obj)`
17. d) `stopifnot()`
18. a) Converts an object to a character vector
19. a) `is.null(obj)`
20. a) Converts an object to a numeric vector
21. a) `as.factor()`
22. a) Converts an object to a logical vector
23. a) `is.numeric(obj)`

- 24. a) `is.dataframe(obj)`
- 25. a) `as.character()`
- 26. a) Returns the attributes of an object
- 27. a) `is.character(obj)`
- 28. a) Converts an object to a factor
- 29. a) `is.factor(obj)`
- 30. b) `as.class()`

UNIT V

- 1. In R, which function is used to create a basic plot with coordinate vectors?
 - a) `plot()`
 - b) `barplot()`
 - c) `hist()`
 - d) `boxplot()`

- 2. How can you customize the appearance of a plot in R?
 - a) Using graphical parameters
 - b) Using color palettes
 - c) Using plot types
 - d) Using data sets

3. What is the purpose of a title in a plot?

- a) To label the x-axis
- b) To label the y-axis
- c) To provide a description of the plot
- d) To add colors to the plot

4. How can you add axis labels to a plot in R?

- a) Using the `xlabel()` and `ylabel()` functions
- b) Using the `title()` function
- c) Using the `text()` function
- d) Using the `legend()` function

5. How can you change the color of lines in a plot in R?

- a) Using the `col` parameter in the `plot()` function
- b) Using the `pch` parameter in the `plot()` function
- c) Using the `col` parameter in the `lines()` function
- d) Using the `pch` parameter in the `lines()` function

6. How can you change the appearance of points in a plot in R?

- a) Using the `pch` parameter in the `plot()` function
- b) Using the `col` parameter in the `plot()` function
- c) Using the `pch` parameter in the `points()` function
- d) Using the `col` parameter in the `points()` function

7. How can you set the limits of the plotting region in R?

- a) Using the `xlim()` and `ylim()` functions
- b) Using the `axis()` function
- c) Using the `par()` function
- d) Using the `plot()` function

8. How can you add points, lines, and text to an existing plot in R?

- a) Using the `points()`, `lines()`, and `text()` functions
- b) Using the `add_points()`, `add_lines()`, and `add_text()` functions
- c) Using the `par()` function
- d) Using the `plot()` function

9. Which package in R is commonly used for advanced plotting and visualization?

- a) `ggplot2`
- b) `base`
- c) `lattice`
- d) `plyr`

10. How can you create a quick plot using the `ggplot2` package in R?

- a) Using the `plot()` function
- b) Using the `qplot()` function
- c) Using the `geom_plot()` function
- d) Using the `ggplot()` function

11. How can you set appearance constants with geoms in ggplot2?

- a) Using the size parameter
- b) Using the color parameter
- c) Using the shape parameter
- d) Using the fill parameter

12. How can you read a file into R?

- a) `read_file()`
- b) `load_data()`
- c) `import_data()`
- d) `read.table()`

13. What are R-ready data sets?

- a) Data sets provided with the R software
- b) Data sets created by R users and shared online
- c) Data sets that require additional processing before use in R
- d) Data sets used exclusively by the ggplot2 package

14. What is the purpose of contributed data sets in R?

- a) To provide additional examples for learning R
- b) To test the functionality of R packages
- c) To evaluate the performance of R functions
- d) To improve the documentation of R functions

15. How can you read in external data files in R?

- a) `read.csv()`
- b) `import_data()`
- c) `load_data()`
- d) `read.file()`

16. How can you write out data files in R?

- a) `write.csv()`
- b) `export_data()`
- c) `save_data()`
- d) `write.file()`

17. How can you write out plots as image files in R?

- a) `save_plot()`
- b) `export_plot()`
- c) `write_plot()`
- d) `ggsave()`

18. How can you perform ad hoc object read/write operations in R?

- a) `save()`
- b) `load()`
- c) `write()`
- d) `read()`

19. Which function in R is commonly used to read in CSV files?

- a) `read.csv()`
- b) `read.table()`
- c) `read.delim()`
- d) `read.xlsx()`

20. Which function is used to read in Excel files in R?

- a) `read.xlsx()`
- b) `read.csv()`
- c) `read.table()`
- d) `read.delim()`

21. How can you read in a tab-delimited file in R?

- a) `read.table()`
- b) `read.csv()`
- c) `read.delim()`
- d) `read.xlsx()`

22. What is the purpose of the `write.csv()` function in R?

- a) To write data frames to a CSV file
- b) To write plots to a CSV file
- c) To write vectors to a CSV file
- d) To write functions to a CSV file

23. What does the readRDS() function do in R?

- a) Reads a saved R workspace
- b) Reads an R data file
- c) Reads an R package
- d) Reads an R script

24. How can you write a data frame to an Excel file in R?

- a) write.xlsx()
- b) write.csv()
- c) write.table()
- d) write.delim()

25. How can you save an R object to a file for later use?

- a) save()
- b) write()
- c) export()
- d) saveRDS()

26. How can you load a saved R object from a file?

- a) load()
- b) read()
- c) import()
- d) readRDS()

27. What is the purpose of the `saveRDS()` function in R?

- a) To save an R object as a serialized file
- b) To save a data frame as an RDS file
- c) To save a plot as an RDS file
- d) To save a function as an RDS file

28. How can you read in a JSON file in R?

- a) `json_read()`
- b) `read.json()`
- c) `jsonlite::fromJSON()`
- d) `json_parse()`

29. What does the `writeLines()` function do in R?

- a) Writes character strings to a file
- b) Writes numeric vectors to a file
- c) Writes data frames to a file
- d) Writes plots to a file

30. How can you export a plot to a PDF file in R?

- a) `pdf()`
- b) `export_pdf()`
- c) `save_pdf()`
- d) `ggsave()`

Answers

1. a) `plot()`
2. a) Using graphical parameters
3. c) To provide a description of the plot
4. a) Using the `xlabel()` and `ylabel()` functions
5. c) Using the `col` parameter in the `lines()` function
6. c) Using the `pch` parameter in the `points()` function
7. a) Using the `xlim()` and `ylim()` functions
8. a) Using the `points()`, `lines()`, and `text()` functions
9. a) `ggplot2`
10. b) Using the `qplot()` function
11. d) Using the `fill` parameter
12. d) `read.table()`
13. b) Data sets created by R users and shared online
14. a) To provide additional examples for learning R
15. a) `read.csv()`
16. a) `write.csv()`
17. d) `ggsave()`
18. b) `load()`
19. a) `read.csv()`
20. a) `read.xlsx()`
21. c) `read.delim()`
22. a) To write data frames to a CSV file
23. a) Reads a saved R workspace
24. a) `write.xlsx()`

25. a) save()

26. a) load()

27. a) To save an R object as a serialized file

28. c) jsonlite::fromJSON()

29. a) Writes character strings to a file

30. d) ggsave()
