ITW-quiz

1. What will the output of the following code be? x <- c(1, 2, 3, 4) x[x > 2] A) c(1, 2) B) c(2, 3) C) c(3, 4) D) c(1, 3)
   Ans: c
2. What does the summary() function do in R? A) Summarizes data as a histogram B) Provides statistical summaries of data C) Summarizes code execution time D) Plots the data
   Ans. B
3. What is the class of the following object? x <- c(TRUE, FALSE, TRUE) A) logical B) numeric C) character D) factor
   Ans. A
4. How do you calculate the mean of a vector x in R? A) avg(x) B) mean(x) C) average(x) D) summarize(x)

   Ans. B

5. Which function is used to read a CSV file in R? A) read.csv() B) read_file() C) load.csv() D) csv.read()
   Ans. A
6. What will the following code produce? x <- 1:5 y <- 6:10 z <- cbind(x, y) class(z) A) matrix B) data.frame C) array D) list
   Ans.A
7. What is the default data structure for data.frame in R? A) Column-oriented B) Row-oriented C) Multidimensional array D) Single-dimensional vector
   Ans. A
8. How do you remove an object named my_obj from the R environment? A) delete(my_obj) B) rm(my_obj) C) remove(my_obj) D) clear(my_obj)
   Ans. B
9. Which of the following is used to install an R package? A) library() B) install() C) install.packages() D) require()
   Ans. C
10. What will the following code return? x <- c(1, 2, NA, 4) mean(x, na.rm = TRUE) A) 2.333 B) 3 C) 2.5 D) NA
    Ans. A
11. How do you create a sequence of numbers from 1 to 10 in R? A) seq(1, 10) B) range(1, 10) C) sequence(1, 10) D) seq(1:10)
    Ans. A
12. What will this code return? x <- c(1, 2, 3) y <- c(4, 5) z <- x +y A) Error B) c(5, 7, 7) C) c(5, 7, 7, 6) D) c(5, 7, 4)
    Ans. B
13. What will this code return? x <- list(a = 1:3, b = 4:6) x$a A) Error B) NULL C) c(1, 2, 3) D) c(4, 5, 6)
    Ans. C

14. What is the output of the following code? x <- factor(c("low", "medium", "high")) levels(x) A) NULL B) c("low", "medium", "high") C) factor D) Error
    Ans. B
15. How do you check for missing values in a vector x? A) is.na(x) B) na(x) C) check.na(x) D) find.na(x)
    Ans. A
16. What is the output of this code? x <- c(10, 20, 30) y <- sum(x > 15) A) 2 B) 3 C) 1 D) Error
    Ans. A
17. What does the ggplot2 package do? A) Data visualization B) Data cleaning C) Statistical testing D) Machine learning
    Ans. A
18. 18. What is the result of the following code? x <- c(1, 2, 3) y <- 2 *x sum(y) A) 12 B) 6 C) 10 D)8
    Ans. A
19. What does the head() function do? A) Displays the first few rows of a dataset B) Displays column names of a dataset C) Removes duplicate rows D) Summarizes the dataset
    Ans. A
20. What is the purpose of the apply() function in R? A) Apply functions to elements of a matrix or array B) Modify data frames C) Perform linear regression D) Subset data
    Ans. A

    Coding question:
    Q1. Write R code to read a CSV file named data.csv and display the first 6 rows of the file.
    Ans. #read csv
    data <- read.csv("path/to/your/data.csv")

    # Display first 6 rows
    head(data)

    Q2. Write R code to reverse a vector. Example Input: x <- c(1, 2, 3, 4, 5) Expected Output: c(5, 4, 3, 2, 1)
    Ans.
    x <- c(1, 2, 3, 4, 5)
    reversed_x <- rev(x)
    print(reversed_x)

    Q3. Write R code to calculate the sum of all even numbers in a vector. Example Input: x <- c(1, 2, 3, 4, 5, 6) Expected Output: 12
    Ans.
    x <- c(1, 2, 3, 4, 5, 6)
    even_no <- sum(x[x %% 2 == 0])

```
print(even_no)
```

Q4. Write R code to count the number of missing (NA) values in a vector. Example Input: x <- c(1, NA, 3, NA, 5) Expected Output:2
Ans.

```
x <- c(1, NA, 3, NA, 5)
num_missing <- sum(is.na(x))
print(num_missing)
```

Q5. Write a function in R to find the second largest number in a numeric vector. Example Input: x <- c(5, 12, 8, 20, 15) Expected Output: 15
Ans.

```
# Function to find the second largest number in a vector
find_second_largest <- function(x) {
  # Remove duplicates
  unique_x <- unique(x)
  # Sort the unique values in descending order
  sorted_x <- sort(unique_x, decreasing = TRUE)
  # Return the second largest value
  if(length(sorted_x) >= 2) {
    return(sorted_x[2])
  } else {
    return(NA)
  }
}

# Example input
x <- c(5, 12, 8, 20, 15)

# Find the second largest number
second_largest <- find_second_largest(x)

# Display the result
print(second_largest)
```