5/21

1701E1164

Candidate's Seat No :_____

PGD in DA Sem.-1 Examination

DA-102

FDM

Time : 1-30 Hours] **January-2025** **[Max. Marks : 70**

Instructions :(1) This paper contains **Thirty Five** questions.
(2) Each Question is of 2 Marks.
(3) Each Question is of multiple choices.
(4) All questions are compulsory.

NO.	QUESTION		Marks
Q.1	How do you assign a value to a variable in R?		
	A. variable = value	B. variable <- value	**2**
	C. variable -> value	D. All of the above	
Q.2	Which of the following is a valid R data type?		
	A. Vector	B. Table	**2**
	C. Class	D. Function	
Q.3	How do you install a new package in R?		
	A. load.package()	B. install.packages()	**2**
	C. download.package()	D. new.package()	
Q.4	What is the default indexing start in R?		
	A. 0	B. 1	**2**
	C. -1	D. None of the above	
Q.5	Which operator is used for matrix multiplication in R?		
	A. %*%	B. *	**2**
	C. mat_mult()	D. .	
Q.6	How can you find the levels of a factor in R?		
	A. levels()	B. get.levels()	**2**
	C. factor_levels()	D. attr()	
Q.7	What function is used to convert a character vector into a factor in R?		
	A. as.character	B. as.factor	**2**
	C. factorize	D. convert.factor	
Q.8	Which of the following is a homogeneous data structure in R?		
	A. Data frame	B. Matrix	**2**
	C. List	D. Factor	
Q.9	What is the primary objective of MDS?		
	A. Perform clustering.	B. Visualize similarities or distances in a low-dimensional space.	**2**
	C. Handle missing values.	D. Perform regression analysis.	

(P.T.O)

Q.10 What function in R performs PCA? **2**

A. pca()
B. prcomp()
C. factorize()
D. dimensionality_reduce()

Q.11 What is the result of this code? **2**

```
x <- matrix(1:9, nrow = 3, ncol = 3)
x[2, 3]
```

A. 5
B. 7
C. 6
D. None of the above

Q.12 What is the result of this code? **2**

```
x <- c(2, 4, 6, 8)
y <- x %% 2
sum(y)
```

A. 0
B. 1
C. 2
D. 4

Q.13 What does the following code compute? **2**

```
df <- data.frame(a = c(1, 2, 3), b = c(4, 5, 6))
df$c <- df$a + df$b
df
```

A. Adds a column c with values c(5, 7, 9)
B. Adds a column c with values c(6, 7, 9)
C. Replaces a with the sum of a and b
D. Error in code

Q.14 What is the output of this code? **2**

```
x <- c(1, 2, 3)
x + c(4, 5)
```

A. c(5, 7)
B. Error
C. c(5, 7, 7)
D. c(5, 7, 7, 7)

Q.15 What does ggtitle() in ggplot2 add to a plot? **2**

A. Axis labels
B. Plot title
C. Legend
D. Subtitles

Q.16 What is a boxplot used for in statistics? **2**

A. To visualize relationships between variables
B. To summarize the distribution of a dataset
C. To display counts of categories
D. To calculate variance

Q.17 Which function is used to create plots in R? **2**

A. plot()
B. graph()
C. chart()
D. hist()

Q.18 What is the purpose of the library() function? **2**

A. To create a library
B. To load a package
C. To install a package
D. None of the above

Q.19 What does the rbind() function do? **2**

A. Combines rows of two or more matrices or data frames
B. Combines columns of two or more matrices or data frames
C. Combines lists
D. None of the above

Q.20 Which statistical test is used to measure the strength of the linear relationship between two variables? **2**

A. t-test
B. ANOVA
C. Chi-squared test
D. Correlation

Q.21 What is the purpose of the while loop in R? **2**

A. To create a function
B. To repeat a block of code
C. To repeat a block of code until a condition is met
D. To read a file

Q.22 What is the purpose of the if statement in R? **2**

A. To create a loop
B. To make a decision
C. To define a function
D. To read a file

Q.23 How do you create a sequence of dates from January 1, 2021, to January 10, 2021, in R? **2**

A. seq(as.Date("2021-01-01"), as.Date("2021-01-10"), by = "day")
B. sequence("2021-01-01", "2021-01-10")
C. dates("2021-01-01", "2021-01-10")
D. range(as.Date("2021-01-01"), as.Date("2021-01-10"))

Q.24 What is the output of the R code **2**

```
x <- c(3, 7, NA, 4, 7)
y <- c(5, NA, 1, 2, 2)
x + y
```

A. 8 NA NA 6 9
B. 8 7 1 6 9
C. Missing Data
D. 15.5

Q.25 Which of the following is true about R lists? **2**

A. Lists in R can only hold elements of the same type.
B. Lists in R are a type of vector.
C. Lists in R cannot contain other lists.
D. Lists in R can hold elements of different types.

Q.26 What is the default method to visualize data in R? **2**

A. ggplot2
B. base
C. lattice
D. shiny

Q.27 What is the result of the expression *is.vector(list(1,2,3))* in R? **2**

A. TRUE
B. FALSE
C. Error
D. NULL

(P.T.O)

Q.28 What is the purpose of the na.rm argument in functions like sum() and mean()? **2**

A. Remove non-numeric values
B. Include missing values
C. Exclude missing values
D. None of the above

Q.29 How many key layers are there in the Grammar of Graphics as implemented in ggplot2? **2**

A. 5
6
B. 7
C. 8

Q.30 Which layer in the Grammar of Graphics determines the coordinate system for the plot, such as Cartesian or polar? **2**

A. Coordinates
B. Data
C. Geometries
D. Aesthetics

Q.31 Which code snippet creates a histogram with ggplot2 and adjusts the bin width? **2**

A. Ggplot(data, aes(x)) + geom_histogram(binwidth = 0.5)
B. ggplot(data, aes(x)) + geom_bar(binwidth = 0.5)
C. ggplot(data, aes(x)) + geom_histogram(width = 0.5)
D. ggplot(data, aes(x)) + geom_bar(width = 0.5)

Q.32 Point out the correct statement? **2**

A. Character strings are entered using either matching double (“) or single (‘) quotes
B. character vectors may be concatenated into a vector by the c() function
C. Subsets of the elements of a vector may be selected by appending to the name of the vector an index vector in square brackets
D. All of the mentioned

Q.33 What will be the output of the following R code? **2**

```
x <- 1:3
y <- 10:12
rbind(x, y)
```

A.
```
[,1] [,2] [,3]
x 1 2 3
y 10 11 12
```

B.
```
[,1] [,2] [,3]
x 1 10 12
y 2 11 3
```

C.
```
[,1] [,2] [,3]
x 1 2 3
y 4 5 6
```

D.
```
[,1] [,2] [,3]
x 1 3 5
y 4 5 2
```

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Q.34 Which Package contains most fundamental functions to run R? **2**

A. root
B. child
C. base
D. parent

Q.35 Which of the following R code will print "Hello, world!"? **2**

A.
```
> f <- function() {
+                 cat("Hello,
world!\n")
+ }
> f()
```

B.
```
>  f <- function() {
+                 cat("Hello,
World!\n")
+ }
< f()
```

C.
```
> f <- function() {
+                 cat("Hello
world!\n")
+ }
>>= f()
```

D.
```
> f <- function() {
-                 cat("Hello
world!\n")
+ }
<= f()
```