

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2022
(Fourth Semester)

Branch – COMPUTER SCIENCE WITH DATA ANALYTICS

R – PROGRAMMING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

1. R language is a dialect of which of the following languages?
(i) s (ii)c (iii) Sas (iv) matlab
2. R functionality is divided into a number of _____
(i) Domains (ii)Classes (iii)Packages (iv) Functions
3. The _____ function is used to convert individual R objects into a binary format that can be communicated across an arbitrary connection.
(i).serialize() (ii)rda() (iii) save.image() (iv) save()
4. Text files can be read line by line using the _____ function.
(i) readlines() (ii)read.csv() (iii) read() (iv) readLines()
5. The _____ operator is used to extract elements of a list or a data frame. It can only be used to extract a single element and the class of the returned object will not necessarily be a list or data frame.
(i) \$ (ii)[[(iii) [(iv) #
6. The _____ function can be used to select columns of a data frame
(i) col() (ii)columns() (iii) select() (iv) frameselect()
7. The _____ function is commonly used in conjunction with for loops in order to generate an integer sequence based on the length of an object.
(i) Seq_along() (ii)seq.along() (iii) seq-long() (iv) seq_along()
8. The _____ function returns a list of all the formal arguments of a function.
(i) formals() (ii)argument()
(iii) formal() (iv) formal_argument()
9. The _____ function is used to evaluate a function over the margins of an array.
(i) lapply() (ii)sapply() (iii) apply() (iv) split()
10. The _____ function must be called immediately after an error occurs.
(i) traceback() (ii)trace()
(iii) debug() (iv) recover()

Cont...

SECTION - B (25 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 5 = 25)

- 11 a List the limitations of R
OR
b Demonstrate Data frames in R with example.
- 12 a Discuss how to read in larger datasets with read.table()
OR
b Explain reading lines of a text file in R with example.
- 13 a Describe the steps for subsetting a matrix.
OR
b Outline the concept subsetting a vector.
- 14 a Examine while loop concept in R with example.
OR
b Discuss argument matching in R.
- 15 a Discuss sapply() function in R.
OR
b Describe debug() function in R.

SECTION -C (40 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 8 = 40)

- 16 a Enumerate R objects.
OR
b Explain the R resources in detail.
- 17 a Explain the steps of File connections.
OR
b Examine the concept of Binary Formats.
- 18 a Demonstrate Dates & Time in R.
OR
b Outline the concept of arrange() and mutate() in R.
- 19 a Discuss for loops and nested for loops in R with example.
OR
b Give an overview of Lexical scoping.
- 20 a Demonstrate the concept of R profiler.
OR
b Describe how to generate random numbers in R

Z-Z-Z

END