

Reg. No

Name

23U336

END SEMESTER EXAMINATION : NOVEMBER 2023

SEMESTER 3 : INTEGRATED M.Sc. PROGRAMME COMPUTER SCIENCE - DATA SCIENCE

COURSE : 21UP3CRMCP9 : R PROGRAMMING AND MATHEMATICS FOR ARTIFICIAL INTELLIGENCE

(For Regular 2022 Admission and Improvement/Supplementary 2021 Admission)

Time : Three Hours

Max. Weightage : 30

PART A

Answer any 8

1. Expand PCA.
2. Mention the library used to find the power of a matrix and its associated function
3. State the duality law
4. Define logical equivalence with an example
5. Mention the scalar types in R
6. Describe functions in R with an example
7. List the common probability distributions used in R
8. Define a scalar
9. Describe the purpose of venn diagrams
10. Define row reduced echelon form of a matrix

(1 x 8 = 8 weight)

PART B

Answer any 6

11. Briefly explain the principle behind dimensionality reduction in PCA
12. Explain the terms used in SVM
13. Explain the importance of eigen value.
14. Explain briefly coercion and combine functions in R
15. Brief on first order logic
16. Write a program in R to find the factors of a number using for loop
17. Brief on how to select the best machine learning models from the existing models.
18. Differentiate between cbind() and rbind()

(2 x 6 = 12 weight)

PART C

Answer any 2

19. Explain data frame operations with the help of an example
20. Explain the concept of matrices, determinants and its inverse in detail
21. Explain in detail the miscellaneous operators in R
22. Explain the concept of logical equivalences using idempotent law, commutative law, absorption law.

(5 x 2 = 10 weight)