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Question Paper Code: BCSB06

M.Tech I Semester End Examinations (Supplementary) - May, 2019

Regulation: .–R18

DATA SCIENCE

Time: 3 Hours (CSE) Max Marks: 70

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) Write the advantages of R programming? Explain various features of R language with necessary examples? [7M]
   (b) Describe data science process in detail. List out loops in R language with suitable examples. [7M]
2. (a) Write various data types in R with necessary examples? Write about all summary statistics in R. [7M]
   (b) How to make data frames. Explain attach() and detach () function with suitable examples. [7M]

UNIT – II

3. (a) Discuss about NoSQL. Explain the features of NoSQL? [7M]
   (b) Write a R script which include relevant packages and procedure to access .CSV and .exl files. Elaborate with necessary example. [7M]
4. (a) Discuss heteroscedasticity in regression. How to identify heteroscedasticity? Explain the methods for resolving it. [7M]
   (b) How to perform correlation analysis between multiple variables in R. Write a R script to get a linear equation y=mx+c from the heart weight and body weight in cats dataset. [7M]

UNIT – III

5. (a) Describe about the data model. Write any four learning techniques and in each case give the expression for weight – updating. [7M]
   (b) Describe the perspectives and issues in machine learning, explain with an example. [7M]
6. (a) State Bayes theorem. Discuss how Bayesian classification works and provide necessary example. [7M]
   (b) List out different types of clustering? Explain about density based clustering with necessary example. [7M]

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UNIT – IV

7. (a) Describe the null and alternative hypothesis with examples. What is p-value and give its importance. [7M]

   (b) List and explain the various activation functions used in ANN. Explain the difference between neuro computing and conventional computing. [7M]

8. (a) Describe the basic structure of back propagation. Explain steps involved in back propagation algorithm. [7M]

   (b) Discuss quasi-Newton learning algorithm. Compare and contrast learning algorithms in neural network. [7M]

UNIT – V

9. (a) How to produce effective presentations? Explain the procedure of presenting results to the sponsor, presenting model to end users and presenting work to data scientists. [7M]

   (b) Summarize the importance of visualization in different types of data in exploration in data analysis. [7M]

10. (a) Discuss about the residuals with respect to observed values? State a case study to show the fitted line and residuals in logistic regression. [7M]

    (b) How to make a matrix plot. Explain the procedure to partition the window to get more number of plots. [7M]

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