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Reg. No. : ....

Name : ....

Second Semester M.A. Degree Examination, September 2024

Behavioural Economics and Data Science

BEDS 523 : FOUNDATIONS OF DATA SCIENCE

(2020 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

SECTION – A

Answer **all** questions. Each question carries **1** mark.

1. Data integration

2. Confusion matrix

3. Inferential statistics

4. ROC curve

5. Parameter

6. PCA

7. Data science

8. Logistic regression

9. Agglomerative clustering

10. Decision trees

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Answer any **seven** questions. Each question carries **5 marks**.

11. Define datafication and explain its significance in the field of Data Science.

12. Explain the concept of hypothesis testing and its role in statistical analysis.

13. What is association rule mining and how is it used in Machine Learning?

14. Explain the philosophy of EDA and its significance in the Data Science process.

15. Explain the decision tree algorithm and how it is used for both classification and regression tasks.

16. What is clustering and how is it used in data analysis?

17. Write a short note on the applications of big data.

18. Discuss the concept of ensemble methods in Machine Learning with a focus on Random Forest.

19. What is data reduction and how does it contribute to data pre-processing?

20. Discuss the role of feature selection in reducing model complexity and improving generalization.

(7 × 5 = 35 Marks)

SECTION – C

Answer any **three** questions. Each question carries **10 marks**.

21. Explain the concept of Exploratory Data Analysis (EDA) and what are the basic tools used in EDA?

22. Discuss the emerging trends and challenges in the field of Data Science.

23. Explain the concept of data visualization and its role in communicating information effectively.

24. Discuss hierarchical agglomerative clustering and its process of merging clusters.

25. Describe different feature selection algorithms used in Machine Learning, including filters and wrappers.

(3 × 10 = 30 Marks)

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