B.Tech.
(SEM V) THEORY EXAMINATION 2022-23
DATA ANALYTICS

Time: 3 Hours   *Total Marks: 100*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   **Attempt *all* questions in brief.**   **2 x 10 = 20**

    (a)   What are the common open source tools for the model building phase?
    (b)   What is decision tree?
    (c)   What is learning rate?
    (d)   What is rule induction?
    (e)   How can you deal with uncertainty?
    (f)   What is DSMS?
    (g)   Write names of two visualization tools.
    (h)   Explain the principle behind Hierarchical clustering technique.
    (i)   Differentiate between Pig and SQL.
    (j)   Write a short note on R graphical user interface.

SECTION B

2.   **Attempt any *three* of the following:**   **10x3 = 30**

    (a)   Compare and contrast traditional analytics structure to modern analytics architecture.
    (b)   Explain multivariate analysis and Bayesian network.
    (c)   Explain Datar-Gionis-Indyk-Motwani (DGIM) algorithm for counting oneness in a window.
    (d)   Why PCY algorithm is preferred over Apriori algorithm?
    (e)   How RDBS is different from NoSQL?

SECTION C

3.   **Attempt any *one* part of the following:**   **10x1 = 10**

    (a)   Explain Apache Hadoop , KNIME & Open refine in detail.
    (b)   Explain various phases of Data Analytics Life Cycle.

4.   **Attempt any *one* part of the following:**   **10x1 = 10**

    (a)   Differentiate between Crisp logic and Fuzzy logic.
    (b)   What are the different kernel methods of Data Analytics?

5.   **Attempt any *one* part of the following:**   **10x1 = 10**

(a) Explain Bernoulli sampling with its algorithm.
(b) What are the different components of a general stream processing model? List few sources of streaming data .

6.   **Attempt any *one* part of the following:**   **10x1 = 10**

(a) What is Prediction error ? With the help of suitable example explain prediction error in classification and regression.
(b) Explain SON algorithm to find all or most frequent item sets using at most two passes.

7.   **Attempt any *one* part of the following:**   **10x1 = 10**

(a) Draw and discuss the architecture of Hive in detail.
(b) What are the approaches to integrate the human in data exploration process to realize different types of approaches to visual data mining?