

Computer Science : Paper IV - Elective II- Business Intelligence & Big Data Analytics
(Business Intelligence).

Time: 2 1/2 Hours

75 Marks

N.B.

- 1) All questions are compulsory.
- 2) Figures to the right indicate marks.
- 3) Illustration, depth answers and diagram will be appreciated.
- 4) Mixing of sub-questions is not allowed.
- 5) Each question carries 5 marks.

Q.1 Attempt Any Three of the following:

15 Marks

- a) Explain use and benefit of business intelligence
- b) What are several types of DSSs
- c) What is the Data, Information, Knowledge, Wisdom (DIKW) Pyramid?
- d) Explain the process of Knowledge Discovery in Databases
- e) What is Noisy data?
- f) Write a note on data smoothing.

Q.2 Attempt Any Three of the following:

15 Marks

- a) Explain in detail regression, clustering and sampling methods
- b) What is Normalization? Explain 3rd, 4th, 5th Normalization?
- c) What is a data warehouse?
- d) Describe the data warehousing process?
- e) Explain the importance of metadata
- f) Describe the data warehousing process

Q.3 Attempt Any Three of the following:

15 Marks

- a) Identify and discuss the role of middleware tools.
- b) Explain data warehouse models in details
- c) Explain the issues in data mining
- d) Explain in details OLAP tools
- e) Differentiate Data mining and data warehouse
- f) Explain Three-Tier Architecture of data warehouse

Q.4 Attempt Any Three of the following:

15 Marks

- a) Difference between OLTP and OLAP
- b) Explain Apriori algorithm with its advantages and disadvantages.
- c) What are FREQUENT ITEMSETS, CLOSED ITEMSETS AND ASSOCIATION RULE
- d) Explain FP-Growth algorithm with its advantages and disadvantages
- e) What are Approaches to Build Data Warehouse?
- f) Explain the terms: Frequent Itemsets, Closed Itemsets and Association Rule

Q.5

Attempt **Any Three** of the following:

15 Marks

- a) Explain ETL Process in Data Warehouse
- b) Explain OLTP and OLAP System
- c) Explain two type of data warehouses design approach
- d) Write Characteristics, Advantage and Disadvantage of Snowflake Schema
- e) Explain Characteristics of Data Warehousing:
- f) Explain binning for data smoothing
