

1128  
**M.E. (Computer Science and Engineering)**  
**First Semester**  
**Elective – I**  
**CS-8107: Business Intelligence**

**Time allowed: 3 Hours**

**Max. Marks: 50**

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) What is OLAP?
- b) List any two main challenges in data integration,
- c) What is Data cube?
- d) Can we use primary keys of databases while making data warehouses?
- e) List any two steps in data transformation.
- f) What are KPIs?
- g) What are columnar databases?
- h) What is stream computing?
- i) List any two reasons to use NoSQL databases
- j) List any two types of dashboards. (10x1)

**UNIT – I**

- II. a) Discuss the three-layer architecture of BI framework. Explain the outermost layer in detail?  
 b) Describe the responsibilities of a typical BI managers. (6,4)
- III. Suppose that Data Warehouse of a Driving license forum contains the following three dimensions: Driver-Details, Driving Test\_Details, Date and two measures 'Ratio of Total test passed over Scheduled' date wise and Average lest cleared monthly. Describe the three classes of schema that are popularly used for modeling data warehouses. Draw a snowflake and fact constellation diagram for the data warehouse. Starting with the base cuboid, what specific OLAP operation should be performed in order to list the total driving test cleared by in last three years. (10)
- IV. a) What are the main functionalities of SQL Server reporting Services?  
 b) What is the use of fish Bone diagram?  
 c) Analyze the multistage and pipeline approach of data transformation. (2,3,5)

P.T.O.

UNIT - II

- V. a) What are different types of dashboards? What is the different between corporate and enterprise dashboards.
- b) Explain the different layers of strategy map in detail? (5,5)
- VI. a) Describe the measurement system in detail. How do we fix different measures?
- b) Why traditional distributed system cannot be used for Big data'? Explain the HDFS and its main advantages. (5,5)
- VII. a) Describe the main data types used in JAQL. Illustrate the difference between arrays and records in JAQL using an example.
- b) Write a short note on:-
- i) JSON
  - ii) HBASE (5,5)

x-x-x