

(3 Hours)

[Total Marks : 80]

- N.B.:**
- 1. Question no. 1 is compulsory.**
 - 2. Attempt any Three** from out of remaining **Five** questions.
 - 3. Assume suitable data** wherever necessary.
 - 4. Figures at right indicates full marks.**

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- Q 1 a Explain challenges in ETL functions. **5**
b Differentiate between Star and Snowflake Schema **5**
c Explain Query processing in detail. **5**
d Write a note on Mandatory Access Control. **5**
- Q 2 a Explain Discretionary Access Control with grant option. **10**
b Explain the concept immediate data extraction and deferred data extraction in data warehouse with suitable example. **10**
- Q 3 a Explain external sort merge algorithm with proper example and required number of block transfer and seek cost. **10**
b What is big data? Explain in detail types and characteristics of big data. **10**
- Q 4 a Draw and Explain Enterprise and federated data warehouse architectures. **10**
b What is mean by Distributed databases? List and explain types of distributed databases. **10**
- Q 5 a Consider a data warehouse for weather related data like region, date and temperature. Using this example analyse the following OLAP operations 1)slice 2)dice 3)rollup 4)drill down 5)pivot. **10**
b Explain in brief the CAP theorem and BASE property of NOSQL with suitable diagram **10**
- Q 6 Write Short Note on:
a Data loading techniques in data warehouse **10**
b Temporal and Spatial Databases **10**
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