

Tribhuvan University
Institute of Science and Technology
2076

Bachelor Level / fourth-semester / Science Full marks: 60 **Computer Science and Information Technology(CSC260)** Pass marks: 24 (Database Management System) Time: 3 hours Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt all the questions.

Section A

Long Answer Questions

Attempt any Two questions

1. What are the advantages of using Database Management System over traditional filing systems? Explain different data models with example.(3 + 7)
2. What is concurrency control? Name various methods of controlling concurrency control? Differentiate between Binary lock and shared/Exclusive lock.(3 + 3 + 4 = 10)
3. What is the normal form? Explain their types. Explain about lossless join decomposition.(3 + 3 + 4 = 10)

Section-B

Short Answer Questions(8 x 5 = 40)

Attempt any Eight questions.

4. What is data abstraction? What are three levels of data abstraction? Explain.(2 + 3)
5. What is the difference between Entities and Entity sets? Explain with example.(5)
6. Create two table Courses (CID, Course, Dept) and HoD (Dept, Head) using SQL language with all constraints [Primary key, Foreign key and Referential Integrity]. Assume the types of attributes by your own.(5)
7. Differentiate between Integrity and Security with example.(5)
8. Define schedule and serializability. How can you test the serializability?(2 + 3)
9. What is Granularity of data items? How does it effect in concurrency control?(2 + 3)
10. Explain 2 phase locking technique in brief.(5)
11. What are the different approaches to Database recovery? What should log file maintain in log-based recovery?(3 + 2 = 5)
12. Explain the use of primary and foreign keys in DBMS with examples. What is the role of foreign key?(3 + 2)

