

Tribhuvan University
Institute of Science and Technology
2081
☆

Bachelor Level / Fourth Year/ Eighth Semester/ Science
Computer Science and Information Technology (CSC461)
(Advanced Database)
(NEW COURSE)

Full Marks: 60
Pass Marks: 24
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.*

Section A

Long answer questions.

Attempt any TWO questions.

(2×10=20)

1. Explain different object database concepts in brief. What are type constructors? (5+5)
2. Why do we need query optimization in databases? Explain heuristic query optimization with example. (3+7)
3. Explain different distributed database architectures? What is data fragmentation? (7+3)

Section B

Short answer questions.

Attempt any Eight questions.

(8×5=40)

4. Explain different constraints of specialization and generalization. (5)
5. What is hashing? How does hashing improve database efficiency? (1.5+3.5)
6. Explain ODMG object model. (5)
7. What are the uses of query trees in query processing? Explain. (5)
8. What is CAP theorem? Explain. (5)
9. What is Big Data? What are its 3 V's? (1.5+3.5)
10. What are triggers? What are the uses of triggers? (2+3)
11. Why do we need spatial databases? What are common types of analysis for spatial data? (2+3)
12. Write short notes on: (2 × 2.5 = 5)
 - a) Map Reduce
 - b) Multimedia database