

Calcutta University
MSC 2nd Year
Advanced Database Management System (CSMC 201)
MID SEM
Full Mark=20

✓ 1. Answer any **four** Question:

4x2=8

- ✓ a) What is normalization?
- ✓ b) Define fully functional dependency with the help of suitable example.
- ✓ c) Differentiate between extendible and static hashing.
- ✓ d) Define query optimization.
- ✓ e) What is conflict?

✓ 2. Answer any **Three** question:

3x4=12

- ✓ a) A table has fields, F1,F2,F3,F4,F5, with the following functional dependencies:

$F1 \rightarrow F3, F2 \rightarrow F4, F1.F2 \rightarrow F5$ in terms of Normalization, this table is in which normal form? Break the table so that it can achieve BCNF.

- ✓ b) Perform double hashing to store the data item:

First hash function is $h1(k) = k \% 7$ and second is $h2(k) = (h1(k) + (i * h2(k))) \% n$
 $n = 7$
 $1 + (k \bmod 5)$

Values are: 27, 43, 692, 72

- ✓ c) Explain cost-based query optimization with example.
- ✓ d) Explain lost-update and dirty read problem with example.