



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours/Programme 2nd Semester Examination, 2020

CMShGEC02T/CMShGCOR02T-COMPUTER SCIENCE (GE2/DSC2)

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

GROUP-A

1. **Answer any four questions from the following:**

- (a) What do you mean by DDL and DML?
- (b) What are the functions of DBA?
- (c) What is data dictionary?
- (d) What is an ER diagram?
- (e) What is functional dependency?
- (f) What is instance?
- (g) Define strong entity set with an example.

2×4 = 8

GROUP-B

Answer any four questions from the following

- 2. (a) What do you mean by derived attribute?
- (b) Briefly explain the following Relational algebraic operations with example.
 - (i) Cartesian Product (ii) Select Operation
- (c) What is Normalization?
- 3. (a) What do you mean by generalization and specialization?
- (b) What is mapping constraints?
- (c) Draw an ER diagram for a library management system.
- 4. Consider the following relational schema
 - Account (account-number, branch-name, balance)
 - Loan (Loan-number, branch-name, balance)
 - Depositor (Depositor-Id, Customer-name, Account-number)
 - Borrower (Borrower-Id, Customer-name, Loan-number)

8×4 = 32

2+(2+2)+2

2+2+4

2×4 = 8

- Write queries in SQL for the following:
- Find all loan numbers for loan made at Bombay branch.
 - Find all customers who have both a loan and an account at the bank.
 - Find the average account balance at each branch.
 - Find the number of depositors at each branch.
5. Write short notes on any *four* of the following: 2×4 = 8
- Schema
 - Relational Algebra
 - Super Key
 - DBA
 - Foreign Key
6. (a) What is 3NF? Give example. 2+2+4
- (b) What do you mean by dependency preservation?
- (c) Decompose the following relation R till 3NF. R (ABDLPT).FD: {B@PT, T@L, A@D}
7. (a) What is DBMS? 2+2+2+2
- (b) Write the advantages of DBMS over file management system.
- (c) What is Referential Integrity?
- (d) What is ACID property?

N.B. : Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.

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