



WEST BENGAL STATE UNIVERSITY
B.A./B.Sc. Honours 3rd Semester Examination, 2020, held in 2021

CMAACOR05T-COMPUTER APPLICATION (CC5)

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.*

Answer question no. 1 and any *four* questions from the rest

1. Answer any *four* questions from the following: 2×4 = 8
 - (a) What is foreign key?
 - (b) What are the functions of Database Administrator (DBA)?
 - (c) Define data dictionary.
 - (d) Who are Naive users?
 - (e) What do you mean by DDL? Write one DDL command name with syntax.
 - (f) What do you mean by FD?
 - (g) What is Derived attribute?

2. Construct an E-R diagram for a “Hospital” with a set of ‘Patients’ and a set of ‘Doctors’, associate with each ‘Patient’ a log of the various test and examination conducted. 8

3. (a) Discuss about the architecture of DBMS. 4
(b) Discuss about the cardinalities in databases. 4

4. (a) Write short notes with diagram: (i) Specialization and (ii) Generalization 2+2
(b) Give significant advantages of DBMS over File-System. 4

5. (a) What is the use of DROP command and what are the differences between DROP, TRUNCATE and DELETE commands? 5
(b) Explain Entity, Entity Type, and Entity Set in DBMS. 3

6. (a) What is the Difference between Single valued and multi valued attributes? 3
(b) Why normalization is necessary? How does BCNF differ from 3NF? 2+3

7. Consider the following relational database: 4+4
- Lives (Person-name, Street, City)
- Words (Person-name, Company-name, Salary)
- Located-In (Company-name, City)
- Manager (Person-name, Manager-name)
- Give an example in Relational Algebra / SQL for each of the following queries:
- (i) Find the name, street and city of all employee who work for company “ABC” and earn more than Rs. 50,000/-.
- (ii) Assuming that the companies may be located in several cities, find all companies located in every city, in which the company “XYZ” is located.
8. (a) Consider a relation scheme $R = (A, B, C, D, E, H)$ on which the following functional dependencies hold: $\{A \rightarrow B, BC \rightarrow D, E \rightarrow C, D \rightarrow A\}$. 5
- What are the candidate keys of R ?
- (b) What is referential integrity constraint in DBMS? 3

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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