

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. SECOND SEMESTER EXAMINATION, SEPTEMBER 2020

FIRST YEAR [BATCH 2019-22]

COMPUTER SCIENCE (General)

Date : 28/09/2020

Time : 11.00 am – 1.00 pm

Paper : II

Full Marks : 25

Answer all questions

Group – A

1. a) Discuss ER data Model with their pros and cons. [2.5]
2. a) What do you mean by cardinality of a relation? [2]
b) Discuss different types of mapping cardinality [3]
3. Consider the database schema given below and answer the following queries using Relational Algebra expression:
Teacher (t_name, dept, tel_no)
Subject (s_title, credit)
Student (s_name, course, hostel)
Taught-by (t_name, s_title)
Taken-by (s_name, s_title, status, grade)
(i) Find the names of students who take DBMS (subject) as elective (status) and secure A-grade.
(ii) Student of Aurobindo hostel who do not study DBMS [2.5+2.5]

Group – B

4. Rewrite the following IP addresses using dotted-decimal notation and find its class:
01011110 10110000 01110101 00010101 [1.5 + 1]
5. a) Why bit synchronization between sender and receiver is required? [2]
b) What is the necessity of mask in network addressing? Explain. [3]
6. a) Give differences between subnetting and supernetting with example. [3]
b) Differentiate between MAC address, IP address and Port address. [2]

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