2021
COMPUTER SCIENCE
[GENERAL]
Paper : III

Full Marks : 50   Time : 2 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP-A

1. Answer any **five** questions: 2×5=10

    a)   What is flowchart?

    b)   What is SRS?

    c)   Define Temporal Cohesion.

    d)   Differentiate between error and failure.

    e)   Define Natural Join with an example.

    f)   Distinguish between key and super key.

    g)   What is user acceptance testing?

    h)   What is feasibility study?

[Turn over]

GROUP–B

Answer any **five** questions: 8×5=40

2.   Consider the following schema:

      Sailors (sid, sname, rating, age)

      Boats (bid, bname, color)

      Reserves (sid, bid, day(date))

Write SQL statement for the following queries:

a)   Find all information of sailors who have reserved boat number 101.

b)   Find the names of sailors who have reserved a red boat, and list in the order of age.

c)   Find the names of sailors who have reserved at least one boat.   2+3+3

3.   a)   Discuss the role of a system analyst in system analysis and design.

    b)   Explain in detail the structure of SRS.   4+4

4.   Explain waterfall model for software life cycle and write its various activities in each phase.   8

5.   Write short notes (any **two**):   4×2=8

    a)   Black box testing

    b)   Sequential file organization

    c)   System maintenance

6. a) State 1NF, 2NF and 3NF and explain with examples.

   b) Define candidate key.   6+2

7. a) Define coupling.

   b) Explain different types of coupling.   2+6

8. a) What are the advantages of DBMS?

   b) Describe the concept of client/server model.   3+5

9. Consider a relation **PLAYER** with relational schema *PLAYER (Player-no, Player-name, Team, Team-color, Coach-no, Coach-name, Player-position, Team-captain)* and set of functional dependencies as follows:

   F={ Player-no → Player-name,

   Player-no → Player-position,

   Player-no → Team,

   Coach-no → Coach-name,

   Team → Team-color,

   Team → Coach-no,

   Team → Team-captain}

   Convert the relation upto third Normal Form.

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