

**II Semester B.C.A. Examination, September/October 2022
(NEP) (2021 – 22 and Onwards)
COMPUTER SCIENCE**

1/2

2.3 : Database Management System

Time : 2½ Hours

Max. Marks : 60

Instruction : Answer all Parts.

PART – A

I. Answer any four questions. Each question carries two marks. (4×2=8)

- 1) Define DBMS. Mention one application of DBMS.
- 2) Mention the different types of relationship types.
- 3) What is primary key and candidate key ?
- 4) What are the different categories of SQL statements ?
- 5) What is concurrency control ?
- 6) Mention the two problems caused by the use of locks.

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PART – B

II. Answer any four questions. Each question carries five marks. (4×5=20)

- 7) Explain the different types of Data Model with an example.
- 8) What is an attribute ? Explain any 4 types of attributes with example.
- 9) Explain UNION, INTERSECTION and SET DIFFERENCE operations with an example.
- 10) Explain Boyce Code Normal Form (BCNF) with an example.
- 11) Discuss the different operators used in SQL.
- 12) Explain deadlock and starvation.

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PART – C

III. Answer any four questions. Each question carries eight marks. (4×8=32)

13) a) Explain the DBMS interfaces. 4

b) Explain the three schema architecture of DBMS. 4

14) a) Write short notes on hierarchical and network data model. 4

b) Explain about any two secondary storage devices with example. 4

15) Construct an E-R diagram of student database. 8

16) a) Explain any 2 types of normalization with an example. 6

b) What are the applications of relational algebra in RDBMS ? 2/2

17) a) Explain DDL statements with syntax and examples. 4

b) Discuss any 4 types of join operations. 4

18) a) What is a transaction ? Explain its properties. 5

b) Write a note on database failures.