

**TILAK MAHARASHTRA VIDYAPEETH, PUNE**  
**BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)(044)/**  
**SPECIALIZATION IN CYBER SECURITY (CS)(464)/**  
**BACHELOR OF SCIENCE (COMPUTER APPLICATIONS)(750)/**  
**BACHELOR OF SCIENCE (CYBER SECURITY) (760)**  
**EXAMINATION : MAY/JUNE-2026**  
**SEMESTER– III**  
**Sub: Database Management System (DBMS)**  
**(BCA –341-20/BCA-CS-341-20/BCA23-302/BCAC23-302/BSC24-302/BSCC24-302)**

---

**Date : 04/06/2026**

**Total Marks : 60**

**Time: 2.00 pm to 4.30 pm**

---

**Instructions:**

1. All questions are compulsory unless and otherwise stated.
  2. Bold figures to the right of every question are the maximum marks for that question.
  3. Candidates are advised to attempt questions in order.
  4. Answers written illegibly are likely to be marked zero.
  5. Use of scientific calculators, Log tables, Mollier Charts is allowed.
  6. Draw neat and labelled diagrams wherever necessary.
- 

**Q.1. Fill in the blanks.**

**(5)**

1. \_\_\_\_\_ users need not be aware of the presence of database system or any other system supporting their usage
  - a) Online
  - b) Naïve
  - c) DBA
  - d) Application programmer
2. In case of Network model \_\_\_\_\_ is smallest unit on named data
  - a) Repeating group
  - b) set
  - c) vector
  - d) Data Item
3. Entity Relationship (ER) model was introduced by Chen in \_\_\_\_\_
  - a)1976
  - b) 1977
  - c) 1967
  - d)1978
4. Person-Driving license is an example of \_\_\_\_\_ Relationship
  - a) m:n
  - b) n:m
  - c) 1:1
  - d)1:m
5. \_\_\_\_\_ Normal form is also called as "Atomic value Rule"
  - a) 1<sup>st</sup>
  - b) 2<sup>nd</sup>
  - c) 3<sup>rd</sup>
  - d) 4<sup>th</sup>

**Q.2. State True/False.**

**(5)**

1. A decomposition that is not a lossless decomposition is called loopy decomposition
2. SQL stands for sequential Query language
3. In SQL, Commit and Rollback are DDL commands
4. Deadlock can be precisely described in terms of directed graph, called Wait-for-graph
5. In shadow page table, 2 page tables are maintained during lifetime of transaction.

**Q.3. Answer the following. (Solve any 5)**

**(10)**

1. What is sequential file organization?
2. What is vector? Give example
3. What is strong & weak Entity?

4. What do you mean by Atomicity and consistency property?
5. What is Anomaly? List different types
6. What is denormalization?

**Q. 4. Answer the following in detail. (Solve any 6) (30)**

1. Explain the concept of Entity set & Relationship set
2. Explain advantages & disadvantage of Normalization
3. Write a note on Volatile, Non volatile, Permanent/stable storage
4. Explain the concept of shadow page scheme
5. Write a note on Locking protocol
6. What is deadlock? Explain its detection & prevention
7. Write a note on data warehousing.

**Q. 5. Answer the following in detail. (Solve any 1) (10)**

1. Write a detail note on codd's Rules
  2. Explain the concept of DDL, DML, DCL in detail.
-