

This question paper contains 3 printed pages.

B.C.A. (Sem. - II)

002284

Roll No. 5802338

UG0801

BCA-52T-109

B.C.A. Three/Four Year (Semester - II)

EXAMINATION SESSION 2024-25 (Held in Jul. 2025)

(Faculty of Science)

BACHELOR OF COMPUTER APPLICATIONS

(Database Management Systems)

Time Allowed: Three Hours

Maximum Marks: 80

No supplementary answer book will be given to any candidate. The candidates should write the answers precisely in the main answer book only.

किसी भी परीक्षार्थी को पूरक उत्तर-पुस्तिका नहीं दी जाएगी। परीक्षार्थियों को समस्त प्रश्नों के उत्तर मुख्य उत्तर पुस्तिका में ही लिखने चाहिए।

Answers to short answer-type questions must be given in sequential order. Similarly, all the parts of one question of descriptive part should be answered in one place in the answer-book.

लघुत्तरात्मक प्रश्नों के उत्तर प्रश्नों के क्रमानुसार ही दें। इसी प्रकार किसी भी एक वर्णनात्मक प्रश्न के अन्तर्गत पूछे गए विभिन्न प्रश्नों के उत्तर, उत्तर-पुस्तिका में एक ही स्थान पर क्रमानुसार हल करने चाहिए।

Write your roll number on question paper before start writing the answers of questions.

प्रश्नों के उत्तर लिखने से पूर्व प्रश्न-पत्र पर रोल नम्बर अवश्य लिखिए।

Question paper consists of two parts A and B.

प्रश्न पत्र में दो भाग अ और ब होंगे।

**PART A: 20 marks भाग - अ : 20 अंक**

Part A is compulsory having 10 very short answer-type questions (with a limit of 20 words) of two marks each. This first question is based on knowledge, understanding and applications of the topics/texts covered in the syllabus.

BCA-52T-109

1

P.T.O.

भाग अ में दो अंक के 10 अति लघु उत्तरीय प्रश्न (20 शब्दों की सीमा के साथ) अनिवार्य हैं। पहला प्रश्न पाठ्यक्रम में शामिल विषयों/पाठ के ज्ञान, समझ और अनुप्रयोगों पर आधारित है।

**PART - B : 60 marks भाग — ब : 60 अंक**

Part B of the question paper is divided into four units comprising question numbers 2-5. There is one descriptive question from each unit with internal choice. Each question will carry 15 marks.

प्रश्न पत्र का भाग ब प्रश्न संख्या 2-5 सहित चार इकाइयों में विभाजित किया जाएगा। प्रत्येक इकाई से आंतरिक विकल्प के साथ एक वर्णनात्मक प्रश्न है। प्रत्येक प्रश्न 15 अंक का है।

### PART - A

1. Attempt all questions. Each question carries 2 marks.

2X10=20

- (a) List two advantages of using a DBMS over a file system.
- (b) What is Database Language?
- (c) Define Super Key with an example.
- (d) What is the purpose of an ER diagram?
- (e) Define Relational Algebra.
- (f) What is State of Transaction?
- (g) Define functional dependency with an example?
- (h) What is Log Base Recovery?
- (i) What is Literals in SQL give some examples?
- (j) What is the difference between a view and a table in SQL?

### PART - B

2. (a) Compare DBMS with a Traditional File System. 7
- (b) Describe basic DBMS terminology. 8

OR

- (a) What is Data Independence? Discuss its types, significance, and how it is achieved in a DBMS. 8
- (b) What is a schema in a DBMS? Explain the different types of schemas with examples. 7

3. (a) What are keys in the relational model? Explain candidate key, primary key, and foreign key with examples. 10  
(b) Differentiate between generalization and aggregation. 5

OR

- (a) What is the Entity Relationship (ER) model? Explain various components of an ER diagram with an example. 8  
(b) What are constraints in a DBMS? Explain the different types of constraints with examples. 7
4. (a) What is normalization? Explain its objectives and types with suitable examples for each normal form. 10  
(b) What are ACID properties? Explain. 5

OR

Write short notes on:

- (a) Failure Classifications 7  
(b) Introduction to Security & Authorization 8
5. (a) What are SQL Data Types? Explain the different categories of SQL data types with examples. 5  
(b) Write SQL commands with syntax and examples for the following: 10  
ALTER, DROP, TRUNCATE, GRANT, and JOIN.

OR

- (a) What is SQL? Explain its characteristics and advantages. 7  
(b) What are Queries and Subqueries in SQL? Explain their types with syntax and examples. 8