

This question paper contains 3 printed pages.

BCA(Sem.-II)

Roll No.....11.7.7.92.....

UG0801

003400

BCA-52T-109

BCA Three/Four Year (Semester - II) EXAMINATION

SESSION 2023-24 (Held in Jul. 2024)

(Faculty of Science)

BCA

Database Management System

Time Allowed: Three Hours

Maximum Marks: 80

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

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

Answers of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at 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 अलग-अलग स्थानों पर हल करने के बजाय एक ही स्थान पर क्रमानुसार हल करें।

Write your roll number on question paper before start writing 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 of the paper will be compulsory having 10 very short answer type questions of 2 marks each. The first question shall be based on knowledge, understanding and applications of the topics/texts covered in the syllabus.

(Words limit 20)

प्रश्न पत्र के भाग अ में 2 अंकों के 10 अति लघु उत्तरीय प्रश्न अनिवार्य होंगे। पहला प्रश्न पाठ्यक्रम में शामिल ज्ञान, समझ और अनुप्रयोगों पर आधारित होगा।

(शब्द सीमा 20)

P.T.O.

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PART-B: 60 Marks भाग - ब : 60 अंक

Part B of the question paper is divided into four units comprising question number 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 हैं। 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

- (i) What is a DBMS?
- (ii) What is Data Independence?
- (iii) What are Schemas?
- (iv) What is Data Modeling?
- (v) What is a Relational Model?
- (vi) What is Transaction?
- (vii) What is Deadlock?
- (viii) What is Database Recovery?
- (ix) Define Data Type in SQL.
- (x) What is the role of Aggregation Function?

PART - B

- 2. (a) What are the difference between Database System and File System?
- (b) What are the different types of data models? Explain each.

7

8

OR

- (a) Describe the roles and responsibilities of a Database Administrator.
- (b) Explain the Architecture of a Database Management System.
- 3. (a) Discuss the different types of relationships in E-R diagrams with examples. How do these relationships impact database design?
- (b) Explain the concepts of Super Key and Candidate Key.

7

8

10

5

OR

Explain the concept of relational algebra and its operations. Provide examples of how these operations are used.

15

Discuss the importance of normalization in relational databases. What are the normal forms and their significance?

15

OR

(a) Explain the different types of failures in a database system. How are these failures classified and what are their typical causes? 8

(b) Describe the concepts of Recovery and Atomicity in database systems. How does log-based recovery ensure these concepts? 7

5. (a) What are the different type of SQL JOINS and how do they differ? 8

(b) What are SQL subqueries and how they used? 7

OR

(a) Explain the following SQL commands with examples. 10

(i) Delete

(ii) Insert

(iii) Update

(iv) Select

(v) Create

(b) What is View and how to create View? 5