Q.P. Code No.31432

# Fourth Semester B.Sc., Degree Examinations

## May / June 2026

(NEP Scheme)

## COMPUTER SCIENCE

## NSD0320 : Database Management System

[Max.Marks:60

Time: 2 hrs.]

**Instructions to Students :**

1) The students should legibly write Section number along with question numbers within the margin ONLY.
2) The answers without Section number and question numbers will not be valued.
3) Section – I Multiple Choice Questions should be answered in the First Page of Main answer book and same questions shall not be answered repeatedly.
4) Any identifications like marking, ticking, dots etc., in the options of MCQ (SECTION - I) on the question paper is strictly prohibited. Do not write anything (Except Reg. No.) on the question paper.

## SECTION – I

I. *Select the most appropriate answer from the options provided :* *10X1=10 Marks*

I-1) Database system is a

a) Collection of unrelated data
b) Collection of related data
c) Programming language
d) None

I-2) Conceptual level is also called as :

a) View level
b) Physical level
c) Logical level
d) External level

I-3) Strong entity set contains _____ to create primary – key.

a) Different attributes
b) Sufficient attribute
c) Do not have sufficient attribute
d) Variable set

I-4) Pick odd one from the following :

a) Create
b) Alter
c) Drop
d) Insert

I-5) How many mapping cardinalities in DBMS?

a) 4
b) 3
c) 2
d) 6

*Contd...2*

I-6) Which of the following is the PROJECT symbol is relational algebra :

a) ⋈ b) π
c) ρ d) ∪



I-7) Which is not valid set operation :

c) ∪ b) ∩
d) + d) –

I-8) Which off the following groups are aggregate functions :

a) Total, count, sum b) Avg, add, max
c) Min, max, total d) Avg, count, max

I-9) In PL/SQL executable statements are enclosed within :

a) Begin and end
b) Declare and begin
c) Exception and endif
d) none

I-10) _____ is a pointer to context area in PL/SQL.

a) Package
b) Trigger
c) Cursor
d) Domain

## SECTION – II

**II.** ***Answer any FIVE of the following questions :*** *5X3=15 Marks*

II-1) Explain applications of DBMS.

II-2) Explain symbols used in E – R diagram.

II-3) Define entity, attribute, relation.

II-4) Explain properties of relational algebra and its characteristics

II-5) Briefly explain any two keys.

II-6) Explain anamolies in relational database design.

II-7) List the features of PL/SQL.

II-8) Explain PL/SQL delimiters.

*Contd...3*

## SECTION – III

**III.** ***Answer any THREE of the following:*** ***3X 5= 15 Marks***

III-1) Define data model. Llist its types. Explain any two of them.

III-2) Explain all types of attributes.

III-3) Explain SELECT and PROJECT operations in relational algebra. Give example query (expression) for each.

III-4) Define normalization. Explain 2NF with example.

III-5) Explain structure of PL/SQL program. Give example code block.

## SECTION – IV

**IV. Answer the following questions.** ***2X 10= 20 Marks***

IV-1) a) Discuss Architecture of database.

b) Define the following

i) instance ii) Schema iii) Subschema iv) tuple v) domain (5+5)

**OR**

a) Explain different types of mapping cardinality. Give example to each.

b) Draw an E-R diagram for Banking enterprise. (5+5)

IV-2) a) How primary key and foreign keys are differentiated ? Explain with example.

b) Discuss Cartesian product and Natural Join operations of Relational Algebra. Give example. (5+5)

**OR**

a) What are DDL and DML commands ? Explain.

b) Write a PL / SQL program to find factorial of a given number.

c) Write a note on string function in PL/SQL. (4+4+2)

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