

(i) Printed Pages : 2

Roll No. ....

(ii) Questions : 9 Sub. Code : 

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 1 | 3 | 2 | 1 |
|---|---|---|---|---|

Exam. Code : 

|   |   |   |   |
|---|---|---|---|
| 5 | 0 | 0 | 4 |
|---|---|---|---|

**Bachelor of Arts (FYUP) 4<sup>th</sup> Semester**  
(2056)

**COMPUTER SCIENCE & APPLICATIONS**

**Paper : Database Management System Using Oracle**

**[CAS-DSC-6 (Maj) -402] (Common with B.Sc. 4<sup>th</sup> Sem. FYUP)**

**Time Allowed : Three Hours]**

**[Maximum Marks : 45**

**Note :—** Attempt **five** questions in all, including Question No. IX (Unit-V) which is compulsory and selecting **one** question from each Unit-I to Unit-IV.

**UNIT-I**

- I. (a) Differentiate between primary key, foreign key, and candidate key with examples.
- (b) What are Codd's 12 rules for RDBMS? Discuss any three in detail. 9
- II. This question is based on the Student-Course Enrollment relation.

**Student-Course Enrollment**

| Student ID | Student Name | CourseID | CourseName        | Instructor |
|------------|--------------|----------|-------------------|------------|
| 101        | Amandeep     | C01      | DBMS              | Dr. Sharma |
| 102        | Priya        | C02      | Operating Systems | Dr. Mehta  |
| 103        | Raj          | C01      | DBMS              | Dr. Sharma |
| 104        | Simran       | C03      | Computer Networks | Dr. Gupta  |

(a) Identify the primary key and foreign key.

(b) Normalize the relation to 2NF. 9



## UNIT-II

- III. (a) Discuss the importance of aggregate functions in SQL.  
(b) Define views. What are their advantages? 9
- IV. Write an SQL query to create a table Employee with columns (EmpID, Name, Salary, DeptID) and perform the following operations:  
(a) Insert five records into the Employee table.  
(b) Write a query to display employees earning more than 50,000. 9

## UNIT-III

- V. (a) Discuss the use of SET operators in SQL.  
(b) Explain the importance of group functions in SQL. 9
- VI. (a) Write a query using INNER JOIN to display employee names along with their department names.  
(b) Use UNION to combine results of two queries: employees earning above 60,000 and employees from DeptID = 2. 9

## UNIT-IV

- VII. (a) What is exception handling in PL/SQL? Give examples of predefined exceptions.  
(b) Discuss the scope and visibility of variables in PL/SQL. 9
- VIII. (a) Write a PL/SQL block to calculate the factorial of a number.  
(b) Create a PL/SQL program to display the total salary of employees in a department using cursors. 9

## UNIT-V

- IX. (a) What is a database?  
(b) What is normalization?  
(c) What does RDBMS stand for?  
(d) What is the SQL command to create a table?  
(e) Which SQL clause is used for conditionally retrieving data?  
(f) What is a view in SQL?  
(g) What does COMMIT do in SQL?  
(h) Name a control structure in PL/SQL.  
(i) What is a cursor in PL/SQL? 9