SRI A S N M GOVERNMENT COLLEGE, PALAKOL, W.G. DT (Affiliated to Adikavi Nannava University, Rajahmundry)

(Accredited with NAAC "B" Grade with 2.61 CGPA points)

CBCS/Semester System (W.e.f. 2015-16 Admitted Batch) III YEAR V SEMESTER SYLLABUS

Paper-V: DATA BASE MANAGEMENT SYSTEM

COURSE CODE: BSCS55T

UNIT I Overview of Database Management System:

Introduction, file based system, Drawbacks of file-Based System ,Data and information, Database, Database management System, Objectives of DBMS, Evaluation of Database management System, Classification of Database Management System, DBMS Approach, advantages of DBMS, data models, Components and Interfacesof Database Management System. Database Architecture, Situations where DBMS is not necessary.

UNIT II Entity-Relationship Model:

Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification, relationship degree, relationship classification, reducing ER diagram to tables, enhanced entity-relationship model (EER model), generalization and specialization, ISA relationship and attribute inheritance, multiple inheritance, constraints on specialization and generalization, aggregation and composition, entity clusters, connection types, advantages of ER modelling

UNIT III Relational Model:

Introduction, CODD Rules, relational data model, concept of key, relational integrity, relational algebra, relational algebra, relational algebra, imitations of relational algebra, relational calculus, tuple relational calculus, domain relational calculus (DRC). QBE

UNIT IV Structured Query Language:

Introduction, History of SQL Standard, Commands in SQL, Data Types in SQL, Data Definition Language, Selection Operation, Projection Operation, Aggregate functions, Data Manipulation Language, Table Modification Commands, Table Truncation, Imposition of Constraints, Join Operation, Set operation, view, Sub Query, Embedded SQL,

UNIT V

PL/SQL:

Introduction, Short coming in SQL, Structure of PL/SQL, PL/SQL Language Elements, Data Types, Operators Precedence, Control Structure, Steps to Create a PL/SQL, Program, Iterative Control, Cursors, Steps to create a Cursors, Procedure, Function, Packages, Exceptions Hanling, Database Triggers, Types of Triggers.

Additional Topics: Transactions Management (ACID Properties)

Reference Books

1. "Database System Concepts" by Abraham Silberschatz, Henry Korth, and S.Sudarshan, McGrawhill, 2010, 9780073523323

2. "Database Management Systems" by Raghu Ramakrishnan, McGrawhill, 2002,

3. Fundamentals of Relational Database Management Systems by S. Sumathi, S.Esakkirajan, Springer Publications

- 4. "An Introduction to Database Systems" by Bipin C Desai
- 5. "Principles of Database Systems" by J. D. Ullman
- 6. "Fundamentals of Database Systems" by R. Elmasri and S. Navathe
- 7. "Commercial Application Development using oracle developer2000" by Ivan Bayross

Student Activity:

1. Create yourcollege database for placement purpose.

2. Create faculty database of your college with their academic performance scores

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Paper-V: DATABASE MANAGEMENT SYSTEMS LAB COURSE CODE: BSCS55P

- 1. Draw ER diagrams for train services in a railway station
- 2. Draw ER diagram for hospital administration
- 3. Write DDL, DML commands and Aggregate functions
- 4. Creation of college Database and establish relationships between tables
- 5. Write a view to extract details from two or more tables
- 6. Write a stored procedure to process students results
- 7. Write a program to demonstrate a function
- 8. Write a program to demonstrate blocks, cursors & database triggers.
- 9. Write a program to demonstrate joins
- 10 .Write a program to demonstrate of Aggregate functions
- 11. Creation of Reports based on different queries
- 12. Usage of file locking table locking, facilities in applications.

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CBCS/Semester System (W.e.f. 2015-16 Admitted Batch) III YEAR V SEMESTER MODEL PAPER

Paper-V: DATA BASE MANAGEMENT SYSTEM

Time: 3 Hours

Max.Marks: 75

 $5 \ge 10 = 50$

Note: Answer ALL questions.

1. (A).What is File-based system? Explain the drawbacks of file-based system. (Or)

(B).Define DBMS. Explain the classification of DBMS.

2. (A)Explain generalization and specialization with example.

(Or)

(B).Explain the classification of Attributes in ER model.

3. ((A).Explain CODD relational database rules.

(Or)

(B). What is Relational Algebra? Explain Relational algebra operations.

4. (A).Explain selection and projection operations in relational algebra. (Or)

(B). What are DDL and DML Command in SQL? Write example queries for each

5. (A).Explain various Control Structures in PL/SQL. (Or)

(B). What is Trigger? Explain it with Syntax and example.

SECTION-B

Note: Answer any FIVE questions from the following.

- 6. Define DBMS. Explain data model.
- 7. Explain basic building blocks of entity relationship diagram.
- 8. Define cluster entity. Give an example.
- 9. Explain the concept of relational integrity.
- 10. What are various aggregate functions? Give example queries for each.
- 11. Discuss briefly about 3NF and BCNF.
- 12. Explain the Table Truncation Commands in SQL.
- 13. Explain the data types in PL/SQL.