

SRI VENKATESWARA UNIVERSITY :TIRUPATI

B.Sc(Computer Science)

Fifth Semester Examinations

III YEAR V SEMESTER

Data Base Management System

Course Objective:

Design & develop database for large volumes & varieties of data with optimized data processing techniques.

Course Outcomes

On completing the subject, students will be able to:

1. Design and model of data in database.
2. Store, Retrieve data in database.

UNIT I

Overview of Database Management System: Introduction, Data and information, Database, Database management System, Objectives of DBMS, Evolution of Database management System, Classification of Database Management System, file-based system, Drawbacks of file-Based System ,DBMS Approach,, advantages of DBMS, Ansi/spark Data Model, Data models, Components and Interfaces of Database Management System. Database Architecture, Situations where DBMS is not Necessary, DBMS Vendors and Their Products.

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 traps, advantages of ER modeling.

UNIT III

Relational Model: Introduction, CODD Rules, relational data model, concept of key, relational integrity, relational algebra, relational algebra operations, advantages of relational algebra, limitations of relational algebra, Database Design-Introduction, Objectives of the Database Design, Redundancy and data anomaly, Functional Dependency, Normalization, Steps in Normalization, Unnormal form to 1NF, 1NF to 2NF, 2NF to 3NF, BCNF.

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, Shortcoming 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 Handling, Database Triggers, Types of Triggers.

Text Book:

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

Reference Books

1. "Database System Concepts" by Abraham Silberschatz, Henry Korth, and S. Sudarshan, McGrawhill, 2010,
2. "Database Management Systems" by Raghu Ramakrishnan, McGrawhill, 2002.
3. "An Introduction to Database Systems" by Bipin Desai.
4. "Principles of Database Systems" by J. D. Ullman.
5. "Fundamentals of Database Systems" by R. Elmasri and S. Navathe.

II YEAR IV SEMESTER

DATABASE MANAGEMENT SYSTEMS LAB

1. Creation of college database and establish relationships between tables
2. Write a view to extract details from two or more tables
3. Write a stored procedure to process students results
4. Demonstration of a function
5. Demonstration of blocks, cursors & database triggers.
6. Demonstration of a Joins
7. Demonstration of a Aggregate functions
8. Creation of Reports based on different queries
9. Usage of file locking table locking, facilities in applications.

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B.Sc(Computer Science)

Fifth Semester Examinations

Database Management System

Time: 3Hrs

Max. Marks:75

PART-A

Answer any Five of the following. All Questions carry equal marks. 5×5=25 Marks

1. Explain the operations of Relational Algebra.
2. Write about Data types in SQL.
3. Describe how to handle exceptions in SQL.
4. What is a Cursor? Explain the steps to create a Explicit Cursor.
5. Write about Components and Interfaces of DBMS.
6. Briefly explain Embedded SQL.
7. Write about Data Models.
8. Write about Relationship Classification.

PART-B

Answer one question from each unit. All Questions carry equal marks. 5×10=50 Marks

UNIT-1

9. Explain Drawbacks of file based system.

(OR)

10. Explain about Data Independence.

UNIT-2

11. Explain the process of converting ER Diagram to Tables.

(OR)

12. Define Specialization and Generalization. Explain the constraints on Generalization and Specialization with examples.

UNIT-3

13. Explain Codd Rules.

(OR)

14. Explain the normal forms-1NF,2NF and 3NF.

UNIT-4

15. Explain DML Commands with Syntax and examples.

(OR)

16. a) Explain join operations in SQL. 5M
b) Explain Aggregate functions in SQL. 5M

UNIT-5

17. What is a Trigger? Explain the creation of different types of triggers with syntax.

(OR)

18. Explain Control Structures of PL/SQL.

SRI VENKATESWARA UNIVERSITY :TIRUPATI

B.Sc(Computer Science)

Fifth Semester

Software Engineering

Course Objectives

The Objective of the course is to assist the student in understanding the basic theory of software engineering, and to apply these basic theoretical principles to a group software development project.

Course outcomes

1. Ability to gather and specify requirements of the software projects.
2. Ability to analyze software requirements with existing tools
3. Able to differentiate different testing methodologies
4. Able to understand and apply the basic project management practices in real life projects
5. Ability to work in a team as well as independently on software projects

UNIT I

INTRODUCTION: Software Engineering Definition, Process paradigms, Software Metrics, software project planning.

UNIT II

REQUIREMENTS ANALYSIS: Requirement Engineering, Requirements Elicitation, Requirements Analysis, Requirements Documentation, Student Result Management System Example.

UNIT III

SOFTWARE DESIGN: What is Design?, Modularity, Strategy of Design, Function Oriented Design, Object Oriented Design.

UNIT IV

USER INTERFACE DESIGN :User interface Analysis and Design,.

QUALITY MANAGEMENT: Software Quality Assurance, Quality metrics, Software Reliability.

UNIT V

SOFTWARE TESTING : - Software testing Fundamentals, Basis Path testing , Control Structure testing , Black Box testing .

TESTING STRATEGIES- Integration, Validation and system testing

REENGINEERING- Reverse Engineering , Re-engineering.

Text Books:

1. K.K. Aggarwal and Yogesh Singh,” Software Engineering”, New Age International, 01 Jan-2005.

1. Roger Pressman S., “Software Engineering: A Practitioner's Approach”, 5th Edition, McGraw Hill, 2010.

REFERENCE BOOKS:

1. Sommerville, “Software Engineering”, Eighth Edition, Pearson Education, 2007 .

2. Pfleeger, “Software Engineering-Theory & Practice”, 3rd Edition, Pearson Education, 2009.

3. Carlo Ghazi, Mehdi Jazayari, Dino Mandrioli, “Fundamentals of Software Engineering”, Pearson Education, 2003.

Code No:

SRI VENKATESWARA UNIVERSITY: TIRUPATI
B.Sc Computer Science
Fifth Semester
Software Engineering

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following Questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks

PART - A

Answer any Five of the following. All questions carry equal marks

5 x 5 = 25 Marks

1. What is software?
2. Write about Software architecture.
3. Write about Data flow.
4. Explain Interface design.
5. Write about software design
6. Define Coupling.
7. Write about SQA.
8. Explain Quality metrics?

PART - B

Answer one question from each Unit. All questions carry equal marks

5 x 10 = 50 Marks

UNIT - I

9. Explain in detail about Empirical estimation models.

OR

10. Explain the Software project scheduling?

UNIT-II

11. Explain the Requirement Engineering Processes?

OR

12. Explain Analysis Model in detail?

UNIT-III

13. Explain in detail about architectural styles and patterns?

OR

14. Write about Software Architecture.

UNIT-IV

15. Explain briefly about User interface design?

OR

16. Describe about Computer Interface design and its standards.

UNIT-V

17. Explain different methods involve in Software Quality Assurance.

OR

18. Explain different types of software testing with its advantages