

P R GOVT COLLEGE (A), KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc. – Computers / Semester- V (W.E.F. 2016-2017)
Course Code: CP5207

Course: Relational Database Management System-PAPER-III

Total Hrs. of Teaching-Learning: 52 @ 4 Hrs / Week

Credits: 03

<p>Objectives: On successful completion of the course the students should have understood the designing the data base and concepts of data base management system. The course includes Entity-Relation model, Normalization, Relational model, Relational algebra, and data access queries as well as an introduction to SQL.</p>	<p>OUTCOMES: Upon successful completion of this course, the student should be able to:</p> <ul style="list-style-type: none"> o What is an RDBMS, and how it differs from older flat file systems. o The importance of the data model, its building blocks, and how it relates to business rules. o How data is organized through the use of integrity rules and primary and foreign keys. o The importance of relational set operators o Develop an Entity Relationship Model with the appropriate entities, attributes, relationships. o Use SQL Data Manipulation Language to create and query sample data.
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Module – 1:

Hrs: 12 Hrs

- a. **Introduction to Database systems:** Overview, A historical Perspective, File systems versus a DBMS, Advantages of DBMS.
- b. **Describing and Storing Data in DBMS:** Relational Model, Levels of Abstraction, data Independence.
- c. **Queries in DBMS,** Transaction Management.
- d. **Structure of DBMS,** People dealing Databases.

Module – 2:

Hrs: 12 Hrs

- a. **Data Models:** Data Model Definition, Types of data models.
- b. **Entity Relationship Model:** ER Model, Entities, Attributes and Entity Sets, Relationships and relationship sets, features: Key Constraints
- c. **Normal Forms:** Introduction, Functional Dependencies, Normal Forms: I, II, III.

Module – 3:

Hrs: 12 Hrs

- a. **Relational Model:** Introduction.
- b. **Integrity constraints over relations:** Key, Foreign Key and General Constraints; Enforcing Integrity Constraints, Querying Relational Data.
- c. **Relational Algebra:** Selection, Projection, Set Operations, Renaming, Joins, Division.

Module – 4:

Hrs: 8 Hrs

- a. **Transaction Management & Concurrency Control:** ACID Properties, Serializability.
- b. Lock-Based Protocol, Time stamp Based Protocols.

Module – 5:

Hrs: 8 Hrs

- a. **SQL Queries:** DDL commands, DML commands, DCL commands, TCL commands,
- b. Data constraints, data types, sub-queries, joins,
- c. Set operators, aggregate functions.

Prescribed Books:

1. Data Base Management Systems: Raghu Ramakrishnan, Johannes Gehrke McGraw Hill Edition.
2. Database Management Systems: Majumdar, Pritimoy Bhattacharya
3. Database Management Systems: C.J. Date
4. Database Management Systems: H.F.Korth

III B.Sc. – Computers / Semester- V (W.E.F. 2016-2017)
Course Code: CP5207
Course: Relational Database Management System
PAPER-III

Time: 3 Hrs

Marks: 70

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
1	Section-A Very Short Questions	5	1	5	5	1	5
2	Section-B Short Questions	8	5	40	5	5	25
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL MARKS				125	TOTAL MARKS		70

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
III B.Sc (CS) Course Code: CP5207
(Model paper w.e.f. 2016-2017)

SUBJECT: Relational Database Management Systems
PAPER- III

Time: 3 Hrs
Max. Marks: 70

SEMESTER – V

SECTION - I

Answer ALL questions

5 x 1M= 5 M

1. Explain about Nested Queries?
2. Advantages of Normal Form?
3. Define Entity.
4. Explain the Set operators?
5. What is Join?

SECTION - II

Answer ANY FIVE questions

5 x 5M= 25M

6. Define DBMS?
7. Explain about Database Users.
8. What are the Advantages of DBMS.?
9. Explain about Data independency?
10. Describe the three levels of data abstraction?
11. Explain about Concurrency control?
12. Explain about Select statement in SQL.
13. Write about ACID Properties?

SECTION - III

Answer ALL questions

4 x 10M = 40M

14. a) State the differences between file system and database management system?
(OR)
b) Explain DBMS Architecture in detail.
15. a) What is Data Model? Explain about Relational Data Model in detail.
(OR)
b) What is Normalization? Explain 1 NF, II NF and III NF with examples.
16. a) Explain about Relational Algebra, and explain different Operators available in it.
(OR)
b) What is Transaction? Why Concurrency Control is needed for Transactions?
17. a) Define Query. Explain all the DDL, DML, DCL commands in SQL.
(OR)
b) I) Write about different joins in SQL?
II) What are different data types in SQL?

P R GOVT COLLEGE(AUTONOMOUS), KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc. – Computer Science / Semester- VI (W.E.F. 2016-2017)
Course Code: CP6207

Course: Software Engineering PAPER-III

Total Hrs. of Teaching-Learning: 52 @ 4 Hrs / Week

Credits: 03

<p>Objectives: On successful completion of the subject the students should have understood the different Software Development module, Software Quality factors, Software Cost Estimation factors, and validation and verification techniques.</p>	<p>Outcomes:</p> <ul style="list-style-type: none"> • The ability to analyze, design, verify, validate, implement, apply, and maintain software systems • The ability to work in one or more significant application domains • The ability to manage the development of software systems
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Module – 1:

Hrs: 12 Hrs

- a. **Introduction to Software Engineering:** Definition. Size factors: Total effort devoted to S/W, Distribution of effort.
- b. **Project Size categories:** i) Trivial Projects ii) small projects iii) Medium-size Projects iv) Large Projects v) Very large projects vi) extremely large projects. How programmer spend their life.
- c. **Quality and productivity factors:** i) Individual ability ii) Team communication iii) Product Complexity iv) Appropriate notations v) Systematic Approaches vi) Level of Technology vii) Level of Reliability viii) available time ix) Problem understanding x) Facilities & Resources xi) Adequacy of Training xii) Management Skills xiii) Appropriate goals.

Module – 2:

Hrs: 12 Hrs

- a. **Managerial issues.**
- b. **Planning a Software project:** defining the problem, developing a solution strategy, planning the development process. S.D.L.C.
- c. **Milestones, Documents & Reviews.**
- d. **The cost model.**
- e. **The Prototype Life-cycle method.**

Module – 3:

Hrs: 12 Hrs

- a. **Software cost estimation.**
- b. **Software cost factors:** Programmer ability, product complexity, product size, available time, Required level of reliability, Product size, Level of technology.
- c. **Software cost estimation techniques:** Expert judgment, Delphi cost estimation, Work breakdown structures, Algorithmic cost models.

Module – 4:

Hrs: 8 Hrs

- a. Staffing-level estimation.
- b. Estimating Software maintenance costs.
- c. Software requirements definition specification,
- d. Formal specification techniques.

Module – 5:

Hrs: 8 Hrs

- a. **Design notations:** Data Flow Diagram, Structure charts, Decision tables.
- b. **Verification and validation techniques:** Quality Assurance, walkthrough and inspection: walkthrough, inspections.

Prescribed Books:

- a) Software Engineering Concepts: Richard E.Fairley.
- b) AN Integrated approach to software Engineering: Pankaj Jalote.

Reference Books:

1. Analysis & Design of Information Systems: James A.Senn

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT (W.E.F. 2016-17)
III B.SC (CS) Course Code: CP6207
SEMESTER-VI

SUBJECT: SOFTWARE ENGINEERING
PAPER- III

Time: 3 Hrs
Marks: 70

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
1	Section-A Very Short Questions	5	1	5	5	1	5
2	Section-B Short Questions	8	5	40	5	5	25
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL		21		125	TOTAL MARKS		70

$$\text{Percentage of choice given} = \frac{125 - 70}{125} \times 100 = \frac{55}{125} \times 100 = 44.00\%$$

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
III B.SC (CS) Model paper (W.E.F 2016-2017)
Course Code: CP6207

Subject: Software Engineering
Paper: III

Time: 3 Hrs
Max. Marks: 70

SEMESTER - VI

SECTION - I

Answer ALL questions

5 x 1= 5 M

1. How programmers spend their time in software development?
2. Define required skills?
3. Define medium size projects?
4. Define Quality assurance?
5. Define Integration Testing?

SECTION - II

Answer ANY five questions

5 x 5= 25 M

6. Explain about software requirement specification?
7. Explain about software engineering?
8. Explain about Team Communication?
9. Explain about different project size categories?
10. Explain about product complexity?
11. Explain about Structured Charts?
12. Explain about programmer ability?
13. Explain about problem understanding?

SECTION - III

Answer ALL questions

4 x 10= 40 M

14. a) Explain Phased Life Cycle.
(OR)
b) Explain the different size factors that influence Software projects.
15. a) What are the quality factors that effect in developing the Software product?
(OR)
b) Discuss the managerial issues in planning a Software project.
16. a) Describe the Cost factors that influence in Software Cost Estimation.
(OR)
b) Explain the different Software Cost Estimation Techniques.
17. a) Explain the importance of Data Flow Diagrams using examples.
(OR)
b) Explain about Verification and Validation Techniques?