B.Com (Digital)
GENERIC ELECTIVE COURSE (GE)

SEMESTER VI
(BCDB33601T) :DATA BASE MANAGEMENT SYSTEM

MAX. MARKS: 100

EXTERNAL: 70

INTERNAL: 30

PASS: 40%

Credits: 6

Objective:

To present an introduction to database management systems, with an emphasis on how to organize, maintain and retrieve - efficiently, and effectively - information from a DBMS.

INSTRUCTIONS FOR THE PAPER SETTER/EXAMINER:
1. The syllabus prescribed should be strictly adhered to. \
2. The question paper will consist of three sections: A, B, and C. Sections A and B will have four questions from the respective sections of the syllabus and will carry 10 marks each. The candidates will attempt two questions from each section.
3. Section C will have fifteen short answer questions covering the entire syllabus. Each question will carry 3 marks. Candidates will attempt any ten questions from this section.
4. The examiner shall give a clear instruction to the candidates to attempt questions only at one place and only once. Second or subsequent attempts, unless the earlier ones have been crossed out, shall not be evaluated.
5. The duration of each paper will be three hours.

INSTRUCTIONS FOR THE CANDIDATES:
   Candidates are required to attempt any two questions each from the sections A and B of the question paper and any ten short questions from Section C. They have to attempt questions only at one place and only once. Second or subsequent attempts, unless the earlier ones have been crossed out, shall not be evaluated.

Section A
Introduction: Basic concepts of Database, Characteristics of a Database, Database System Environment. Roles in Database Environment**:** Database Administrators, Database Designers, End Users, Application Developers. Database Management System: Definition and Features, Traditional File System vs DBMS, Significance and Classification of DBMS, Architecture: Data Models, Types of Data Models- Conceptual Data Models, Physical data Models, Representational Data Models, e.g. Object Based Models, Record Based Models, Database Schema and Instance, Three Schema Architecture, Data Independence – Physical and Logical data Independence. Entity-Relationship model**:** Concepts, Entities and Entity Sets, Attributes, Mapping Constraints, E-R Diagram, Weak Entity Sets, Strong Entity Sets, Aggregation,

Generalization, Converting ER Diagrams to Tables.

Section B

Relational Data Model**:** Concepts and Terminology, Characteristics of Relational Database. Constraints: Integrity Constraints**-** Entity and Referential Integrity constraints, Keys- Super Keys, Candidate Keys, Primary Keys, Secondary Keys and Foreign Keys. Relational Algebra**:** Basic Operations, Additional Operations. Normalization: Functional Dependency, Full Functional Dependency, Partial Dependency, Transitive Dependency, Normal Forms– 1NF, 2NF, 3NF, Boyce-Codd NF, MS-ACCESS: introduction to MS-ACCESS, working with databases and tables, queries in Access, Applying integrity constraints, Introduction to forms, sorting and filtering, controls, Reports and Macro: creating reports, using Macros.

Suggested Readings:

1. Elmasri&Navathe, Fundamentals of Database Systems, Addison-Wesley.
2. Connolly &Begg, Database Systems, Pearson Education.
3.   Ivan Bayross, SQL,PL/SQL The programming language of Oracle, BPB Publications.

Reference Books:

1. H. F. Korth&Silverschatz, A., Database System Concepts, Tata McGraw Hill.
2. Hoffer, Prescott, Mcfadden, Modern Database Management, Paperback International.

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