

# MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

## BACHELOR OF COMPUTER APPLICATION (BCA Annual Scheme)

( To be offered in affiliated colleges from session 2016-17)

**1. Duration of the Course :** The BCA (AnnualScheme)course will be of three years duration. Each year will be approximately 10 months (minimum 180 working days) duration.

**2. Medium of Instruction :** The medium of instruction and examination shall be English.

### **Second Year B.C.A.**

**(Effective from session 2015-16)**

- (a) The minimum marks for passing II year shall be 40% in each paper and 40% marks in the aggregate of papers.
- (b) A candidate may be promoted to III year if he has/ she secured at least 40% marks in at least six papers/practicals out of 8 theory/practical papers and more than 40% in aggregate. Such candidate shall be required to appear in papers in which he has secured less than 40% marks along with papers of III year when these courses are offered again, so as to satisfy the passing criteria laid in II(a).
- (c) A candidate fails to satisfy the criteria II(a), II(b) for promotion to III year shall be required to rejoin the course in II year, if otherwise eligible in accordance with the University regulations laid in this regard.

## **BCA- 202: Database Management Systems**

### UNIT-I

**Introduction :** Purpose of the data base system, data abstraction, data model, data independence, data definition language, data manipulation language, data base administrator, data base users, overall structure.

**ER Model :** entities, mapping constrains, keys, E-R diagram, reduction E-R diagrams to tables, generatio, aggregation, design of an E-R database scheme.

### UNIT-II

**Relational Model :** The catalog, base tables and views. Relational Data Objects - Domains and Relations: Domains, relations, kinds of relations, relations and predicates, relational databases.

**Relational Data Integrity** - Candidate keys and related matters: Candidate keys. Primary and alternate keys. Foreign keys, foreign key rules, nulls. Candidate keys and nulls, foreign key and nulls.

### UNIT-III

**The SQL Language:** Data definition, retrieval and update operations. Table expressions conditional expressions, embedded SQL.

**Views:** Introduction, what are views for, data definition, data manipulation, SQL support.

### UNIT-IV

**Network model :** basic concepts, data structure diagrams, DBTG CODASYL model, DBTG data retrieval facility, DBTG update facility, DBTG set processing facility, mapping networks to file, networks system.

**Hierarchical model :** basic concepts, tree structure diagrams, data retrieval facility, update facility, virtual records, mapping hierarchical to files, hierarchical system.

### UNIT-V

**File and system structure :** overall system structure, file organisation, logical and physical file organization, sequential and random, hierarchical, inverted, nulllist, indexing and hashing, B-tree index files.

#### Recommended Books

1. Date C.J., Database Systems, Addison Wesley.
2. Korth, Database Systems Concepts, McGrawHill.