

NMKRV COLLEGE FOR WOMEN
Autonomous Institution
Jayanagar III Block, Bangalore 560 011

**Syllabus of II , IV, VI Semester and Scheme of
Examination**

BSc (PMCs)

Choice Based Credit System (Semester Scheme)

Guidelines are applicable only for

JUNE / JULY EXAMINATION - 2020

(Fresher's and Repeater's)

CSC2.1 – Database Management Systems and Software Engineering

I DATABASE MANAGEMENT SYSTEMS

Unit I.

Introduction Data, Database, Database management system, Characteristics of the database approach, Role of Database administrators, Role of Database Designers, End Users, Advantages of Using a DBMS and When not to use a DBMS. **DBMS Architecture** Data Models – Categories of data models, Schemas, Instances, and Database states. DBMS Architecture and Data Independence – The Three schema architecture, Data independence. DBMS Languages and Interfaces. Classifications of Database Management Systems.

Unit II.

Data Modelling Using Entity-Relationship Model Using High Level Conceptual Data Models for Database Design, Example Database applications. Entity types, Entity Sets, Attributes and Keys. Relationships, Relationship types, Roles and Structural constraints. Weak Entity Types and Drawing E- R Diagrams. **Database Design** Functional dependencies and Normalization for Relational Databases – Normalization concepts, first, second, third normal forms

Unit III.

SQL SQL data definition and data types, specifying constraints in SQL, schema change statements, Basic queries, INSERT, DELETE and UPDATE statements in SQL, Views – Concept of a view in SQL.

CSC2.1P – Database Management Systems

1. Data Definition Language (DDL)
 - a. Create, Drop Alter Keywords
 - b. Tables
 - c. Column
 - d. Views
 - e. Alter table
2. Data Manipulation Language (DML)
 - a. Insert
 - b. Update
 - c. Delete
3. Integrity Constraints
 - a. Types of Constraint
 - b. Referential Integrity
 - c. Defining Constraints

CSC4.1 – Linux Programming and Operating Systems

Unit I.

Introduction and System Structures Operating system definition, computer system organization, and architecture, structure and operations, process, memory and storage management.

Unit II.

Process Management Process concepts, scheduling and operations on processes. Process Scheduling: Basic concepts, scheduling criteria, scheduling algorithms, Synchronization: Background, critical section problems

Unit III.

Deadlock Deadlock: System model, deadlock characterization, methods for handling deadlock, deadlock prevention, avoidance and detection.

CSC4.1P – Linux Lab-Shell Programming

1. Execution of various file/directory handling commands.
2. Simple shell script for basic arithmetic and logical calculations.
3. Shell scripts to check various attributes of files and directories.
4. Shell scripts to perform various operations on given strings.
5. Write a shell script to display list of users currently logged in .
6. Shell scripts to check and list attributes of processes.
7. Shell Scripts to demonstrate if statements.
8. Shell Scripts to demonstrate looping statements.

CSC6.1 – Computer Networks

Unit I.

Introduction

Data communications: components – Network criteria – physical structures – network models – categories of networks –interconnection of networks – inter network Protocols and standards: protocols-standards-standards organizations- internet standards Network models: Layered tasks – OSI model – layers in the OSI model – TCP/IP protocol suite.

Unit II.

Physical Layer

Data and Signals: Analog and Digital: Analog and Digital Data – Analog and Digital signals, periodic and non periodic signals – Transmission Impairment : Attenuation – Distortion – Noise Data Rate limits : Noiseless channel(Nyquist Bit rate) – Noisy channel (Shannon capacity) Digital Transmission: Digital to digital conversion: Line coding – line coding schemes – block coding - analog to digital conversion – PCM - transmission modes: serial transmission – parallel transmission Analog Transmission: Digital to analog conversion: FSK-ASK-PSK Analog to Analog conversion: Amplitude modulation – Frequency modulation – phase modulation Multiplexing: Frequency division multiplexing – Time division multiplexing – Transmission Media Guided media: Twisted pair cable – coaxial cable – fiber optic cable Unguided media: radio waves - micro waves –infrared.

Unit V.

Application layer: & Network Security

DNS: Name space – domain name space – distribution of name space Electronic mail Architecture – FILE transfer: FTP WWW and HTTP: Architecture – web documents – HTTP Network Security: Introduction - definitions – two categories - symmetric key cryptography – traditional ciphers – asymmetric key cryptography.

CSC6.2B – Software Testing

Unit I.

Software Testing Principles Need for testing – Psychology of testing – Testing economies – Types of testing – SDLC and testing – Verification and Validation – Weyuker’s adequacy axioms.

Unit II.

Testing Strategies White box testing techniques – Statement coverage – Branch coverage – Condition Coverage – Decision/condition coverage – Multiple condition coverage- Data flow coverage – Mutation testing – Automated code coverage analysis – Black box testing techniques – Boundary value analysis – Robustness analysis – Equivalence partitioning – Syntax testing – Finite state testing – Levels of testing – Unit, Integration and System testing.

Unit IV.

Test Plan Test cases, Preparation of test plan – Test script.

CSC6.1P – PROJECT LAB
