

ADIKAVI NANNAYA UNIVERSITY

BCA Under CBCS with effect from the academic year 2016-2017 course of study

Table-3: B.C.A. SEMESTER – III

Sno	Course	Total Marks	Mid Sem Exam*	Sem End Exam	Teaching Hours	Credits
1	First Language English	100	25	75	4	3
2	<i>Foundation Course – 5 ICT- 2 (Internet Fundamentals & Web Tools)</i>	50	0	50	2	2
3	<i>Foundation course - 6 Communication & Soft Skills -2</i>	50	0	50	2	2
4	Accounts and Financial Mgmt	100	25	75	6	5
5	DBMS	100	25	75	4	3
6	DBMS Lab	50	0	50	2	2
7	Object Oriented Programming Using JAVA	100	25	75	4	3
8	JAVA LAB	50	0	50	2	2
9	Tally Software	50	0	50	2	2
Total		650			28	24

BCA II Year III Semester

ACCOUNTS AND FINANCIAL MANAGEMENT

Unit - I :

Introduction to accounting: Definitions, objectives, functions - Book keeping and accounting. Accounting concepts and conventions. Accounting cycle, Classification of accounts – Rules of double entry system of bookkeeping – journal – posting to ledger, balancing of ledger.

Unit – II :

Subsidiary Books – Trail Balance: Sub division of Journal – Preparation of subsidiary books Different types of cash books - Preparation of trail balance.

Unit – III:

Final Accounts : Preparation of Final accounts – Trading Account – Profit and loss account – Balance Sheet - Final accounts with adjustments.

Unit – IV:

Introduction to computerized : Meaning of computerized accounting features advantages and disadvantages of computerized accounting - creation of an organization - Grouping of accounts - creation of accounts – creation of inventory – creation of stock groups editing and deleting of Groups and accounts.

Unit – V :

Entering of Financial transactions and display results : Types of vouchers – Voucher entering - editing deleting of vouchers – voucher numbering – display accounting results i.e day book , ledgers trail balance, trading profit and loss a/c and balance sheet.

BCA II Year III Semester

DATABASE MANAGEMENT SYSTEMS

Course Objectives

The objective of the course is to enable students to understand and use a relational database system. Introduction to Databases, Conceptual design using ERD, Functional dependencies and Normalization, Relational Algebra is covered in detail. Students learn how to design and create a good database and use various SQL operations. The course concludes with an overview of transaction management and introduction to advanced and non-relational databases.

Course Outcomes

1. Able to master the basic concepts and understand the applications of database systems.
2. Able to construct an Entity-Relationship (E-R) model from specifications and to transform to relational model.
3. Able to construct unary/binary/set/aggregate queries in Relational Algebra.
4. Understand and apply database normalization principles.
5. Able to construct SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, Delete)
6. Understand principles of database transaction management, database recovery, security.

Unit-1

Database Systems: Introducing the database and DBMS, Files and File Systems, Problems with File System and advantages of Database Management systems.

Data Models: The importance of Data models, Data Model Basic Building Blocks, Business Rules, The evaluation of Data Models, Degree of Data Abstraction.

Unit-II

The Relational Database Model: A logical view of Data, Keys, Integrity Rules, Relational Set Operators, The Data Dictionary and the system catalog, Relationships with in the Relational Database, Data Redundancy revisited, Indexes, Codd's relational database rules.

Entity Relationship Model: The ER Model, Developing ER Diagram,

Unit-III

Normalization of database tables: Database Tables and Normalization, The need for Normalization, The Normal forms and High level Normal Forms, denormalization.

Unit-IV

Introduction to SQL: Data Definition Commands, Data Manipulation Commands, Select queries, Advanced Data Definition Commands, Advanced Select queries, Virtual Tables, Joining Database Tables.

Unit-V

Advanced SQL: Relational Set Operators, SQL Join Operators, Subqueries and correlated queries, SQL Functions, Oracle Sequences, and Procedural SQL.

Reference Books:

1. Peter Rob, Carlos Coronel, Database Systems Design, Implementation and Management, Seventh Edition, Thomson (2007)
2. Elimasri / Navathe, Fundamentals of Database Systems, Fifth Edition, Pearson Addison Wesley (2007).
3. Raman A Mata – Toledo/Panline K Cushman, Database Management Systems, Schaum's Outlibe series, Tata McGraw Hill (2007).
4. C.J.Date, A.Kannan, S.Swamynathan, An Introduction to Database Systems, Eight Edition, Pearson Education (2006).
5. Atul Kahate, Introduction to Database Management Systems, Pearson Education (2006).

Student Activity:

1. Create student database of your college for placement purpose
2. Create student database of your college for fees reimbursement, ADHAAR as primary key

BCA II Year III Semester

DATABASE MANAGEMENT SYSTEMS LAB

1.Order Tracking Database

The Order Tracking Database consists of the following defined six relation schemas.

Employees(eno,ename,zip,hdate)

Parts(pno,pname,qoh,price,level) (hint: qoh: quality on hand)

Customers(cno,cname,street,zip,phone)

Orders(ono,cno,eno,received date,shipped date)

Odetails(ono,pno,qty)

Zipcodes(zip,city)

Solve the following queries

1. Get all pairs of customer numbers for customers based on same zip code.
2. Get part numbers for parts that have been ordered by at least two different customers.
3. For each odetail row, get ono,pno,pname,qty and price values along with the total price for the item. (total price=price*qty)
4. Get customer name and employee pairs such that the customer with name has placed an order through the employee
5. Get customer names living in fort dodge or liberal.
6. Get cname values of customers who have ordered a product with pno 10506.
7. Get pname values of parts with the lowest price.
8. Get cname values of customers who have placed at least one order through the employee with number 1000.

9. Get the cities in which customers or employees are located.
10. Get the total sales in dollars on all orders.
11. Get part name values that cost more than the average cost of all parts.
12. Get part names of parts ordered by at least two different Customers.
13. Get for each part get pno,pname and total sales
14. For each part, get pno,pname, total sales, whose total sales exceeds 1000
15. Get pno, part names of parts ordered by at least two different customers.
16. Get cname values of customers who have ordered parts from any one employee based in wichita or liberal.

2.Shipment database

An enterprise wishes to maintain the details about his suppliers and other corresponding details. For that it uses the following tables

Table s(sid,sname,address)

primary key : sid

Table p(pid,pname,color)

primary key : pid

Table cat(sid,pid,cost)

primary key : sid+pid

reference key : sid references s.sid

pid references p.pid

Solve the following queries

1. Find the pnames of parts for which there is some supplier
2. Find the snames of suppliers who supply every part.
3. Find the snames of suppliers who supply every red part.
4. Find the pnames of parts supplied by london supplier and by no

one else

5. Find the sids of suppliers who charge more for some part other than the average cost of that part
6. Using group by with having clause get the part numbers for all the parts supplied by more than one supplier.
7. Get the names of the suppliers, who do not supply part p2.
8. Find the sids of suppliers who supply a red and a green part
9. Find the sids of suppliers who supply a red or a green part
10. find the total amount has to pay for that supplier by part located from london

3.Employee database

An enterprise wishes to maintain a database to automate its operations. Enterprise divided into to certain departments and each department consists of employees. The following two tables describes the automation schemas

Dept (deptno, dname, loc)

Emp (empno,ename,job,mgr,hiredate,sal,comm,deptno)

1. Create a view, which contain employee names and their manager names working in sales department.
2. Determine the names of employee, who earn more than their managers.
3. Determine the names of employees, who take highest salary in their departments.
4. Determine the employees, who located at the same place.
5. Determine the employees, whose total salary is like the minimum salary
6. of any department.
7. Update the employee salary by 25%, whose experience is greater than 10 years.
8. Delete the employees, who completed 32 years of service.
9. Determine the minimum salary of an employee and his details, who join on the same date.
10. Determine the count of employees, who are taking commission and not taking Commission.

11. Determine the department does not contain any employees.
12. Find out the details of top 5 earner of company.
13. Display those managers name whose salary is more than average salary of his employees.
 1. Display those employees who joined the company before 15th of the month?
 2. Display the manager who is having maximum number of employees working under him?
 3. Print a list of employees displaying 'less salary' if less than 1500 if exactly 1500 display as 'exact salary' and if greater than 1500 display 'more salary'?
 4. Display those employees whose first 2 characters from hire date-last 2 characters of salary?
 5. Display those employees whose 10% of salary is equal to the year of joining?
 6. In which year did most people join the company? Display the year and number of employees.
 7. Display the half of the enames in upper case and remaining lower case
 8. Display ename, dname even if there no employees working in a particular department(use outer join).

4.Pl/sql programs

1. Write a pl/sql program to check the given number is strong or not.
2. Write a pl/sql program to check the given string is palindrome or not.
3. Write a pl/sql program to swap two numbers without using third variable.
4. Write a pl/sql program to generate multiplication tables for 2,4,6
5. Write a pl/sql program to display sum of even numbers and sum of odd numbers in the given range.
6. Write a pl/sql program to check the given number is pollinndrome or not.
7. write a pl/sql procedure to prepare an electricity bill by using following table

table used: elect

name	null?	Type
mno	not null	number(3)
cname		varchar2(20)
cur_read		number(5)
prev_read		number(5)
no_units		number(5)
amount		number(8,2)
ser_tax		number(8,2)
net_amt		number(9,2)

8. Write a procedure to update the salary of employee, who belongs to certain department with a certain percentage of raise.

BCA II Year III Semester

Object Oriented Programming Using JAVA

Course Objectives

As the business environment becomes more sophisticated, the software development (software engineering is about managing complexity) is becoming increasingly complex. As of the best programming paradigm which helps to eliminate complexity of large projects, Object Oriented Programming (OOP) has become the predominant technique for writing software in the past decade. Many other important software development techniques are based upon the fundamental ideas captured by object-oriented programming.

Course Outcomes

At the end of this course student will:

1. Understand the concept and underlying principles of Object-Oriented Programming
2. Understand how object-oriented concepts are incorporated into the Java programming language
3. Develop problem-solving and programming skills using OOP concept
4. Understand the benefits of a well-structured program
5. Develop the ability to solve real-world problems through software development in high-level programming language like Java
6. Develop efficient Java applets and applications using OOP concept
7. Become familiar with the fundamentals and acquire programming skills in the Java language.

UNIT-1

FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING: Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features: **OVERVIEW OF JAVA LANGUAGE:** Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. **CONSTANTS, VARIABLES & DATA TYPES:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values; **OPERATORS & EXPRESSIONS.**

UNIT-II

DECISION MAKING & BRANCHING: Introduction, Decision making with if statement, Simple if statement, if. Else statement, Nesting of if. else statements, the else if ladder, the

switch statement, the conditional operator. **LOOPING:** Introduction, The While statement, the do-while statement, the for statement, Jumps in loops.

CLASSES, OBJECTS & METHODS: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods;

UNIT-III

INHERITANCE: Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes;

ARRAYS, STRINGS AND VECTORS: Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes;

INTERFACES: MULTIPLE INHERITANCE: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

UNIT-IV

MULTITHREADED PROGRAMMING: Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the ‘Runnable’ Interface.

UNIT-V

MANAGING ERRORS AND EXCEPTIONS: Types of errors : Compile-time errors, Runtime errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement,

PACKAGES: Introduction, Java API Packages, Using System Packages, Naming conventions, Creating Packages, Accessing a Package, using a Package.

Reference Books:

1. E.Balaguruswamy, Programming with JAVA, A primer, 3e, TATA McGraw-Hill Company.
2. Programming in Java by Sachin Malhotra, OXFORD University Press
3. John R. Hubbard, Programming with Java, Second Edition, Schaum’s outline Series, TATA McGraw-Hill Company.
4. Deitel & Deitel. Java TM: How to Program, PHI (2007)
5. Java Programming: From Problem Analysis to Program Design- D.S Mallik
6. Object Oriented Programming Through Java by P. Radha Krishna, Universities Press (2008)

Student Activity:

- 1. Create a front end using JAVA for the student database created**
- 2. Learn the difference between ODBC and JDBC**

OBJECT ORIENTED PROGRAMMING USING JAVA LAB

1. Java program to demonstrate the use of Harmonic Series.
2. Java program to display a number of even, odd and sum of even, odd program.
3. Java program to find a sub string in the given string.
4. Java program to arrange the given strings in Alphabetic Order.
5. Java program to implements Addition and multiplication of two Matrices.
6. Java program to demonstrate the use of Constructor.
7. Java program to display a use of method overloading.
8. Java program to demonstrate the use of overriding Method.
9. Java program for single Inheritance.
10. Java program for implementing Interface.
11. Java program on Multiple Inheritance.
12. Java program for to implement Thread, Thread Priority,
13. Java program to demonstrate Exception handling.
14. Java program to demonstrate Applet program.

TALLY LAB

1) Kiran started a business with the following transactions

- i) Kiran started business with Rs. 1,00,000/-
- ii) Kiran purchased goods with Rs. 20,000/-
- iii) Kiran sold products for Rs. 40,000/-
- iv) And he spent Rs. 5,000/- towards for salaries.

I. Practical exercise for the above transactions are

- a) Creating Company Transactions
- b) Creation of Ledgers.
- c) Record of Vouchers.
- d) Preparation of Balance Sheet.
- e) Preparation of Profit and Loss Account
- f) Trial Balance
- g) Day Book

2) Create the above records for any organization and get certified by them with comments