B.C.A. Semester – I

BCA-101 : Fundamentals of Programming Language 'C'

Teaching Scheme (Per week)		Teaching Scheme (Per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	--	40	4	30	--	70	--	100	--

Unit - I **[18 Marks]**

Introduction to Programming:

Concepts of Algorithm and Flowcharts, problem solving examples using algorithm and flowchart, Types of Programming languages, Characteristics of higher level language, Compiler and Interpreter

Overview of C:

Introduction, Importance of C, Sample C programs, Basic structure of C programs, Programming style, executing of C program.

Constants, Variables and data Types:

Introduction, Character Set, C tokens, Keywords and Identifiers, Constants, Variables, Data types, Declaration of Variables, Defining symbolic constants.

Unit - II **[17 Marks]**

Operators and Expression :

Introduction, Arithmetic of Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement Operators, Conditional Operators, Bit-wise Operators, Special Operators, Arithmetic Expressions, Evaluation of expressions, Precedence of arithmetic operators, Type conversions in expressions, Operator precedence and associativity, Mathematical functions.

Managing Input and Output Operators :

Introduction, reading a character, writing a character, formatted input, formatted output.

Unit - III **[18 Marks]**

Decision making branching:

Introduction, Decision making with IF statement, Simple IF statement, the IF ELSE statement, Nesting of IF … ELSE statements, The ELSE IF ladder, The switch statement, the turnery (? :) Operator, the GOTO statement.

Decision Making Looping:

Introduction, the WHILE statement, the DO statement, The FOR statement, Jumps in loops Break and continue.

Unit - IV **[17 Marks]**

Array :

Introduction, One-dimensional, arrays, Two-dimensional arrays, Initialization of two-dimensional arrays, Concept of Multidimensional arrays

Handling of Character strings :
Introduction, Declaring and initializing string variables, Reading strings from terminal, Writing strings to screen, Arithmetic operations on characters, Putting string together, String Operations: String Copy, String Compare, String Concatenation And String Length, String Handling functions, Table of strings.

Text Book:

1. **Programming in ANSI C**, Balagurusamy, Tata McGraw-Hill

Reference Books:

1. Programming in C, by Pradip Dey & Manas Ghosh, Publisher – Oxford
2. The Complete Reference, Herbert schildt Fourth Edition
3. Let Us C , Yashwant Kanetkar, BPB Publications
4. Programming in C, by Reena thareja Publisher – Oxford

Question Paper Scheme:

University Examination Duration: 3 Hours.

Q.1 - Unit-I (12 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
Q.2 - Unit-II (12 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
Q.3 - Unit-III (12 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
Q.4 - Unit-IV (12 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
Q.5 - Programs
A. Unit I & II (10 Marks)
B. Unit III & IV (12 Marks)

Note: All Objective/ Short Questions are compulsory, no option will be given.

B.C.A. Semester – I

BCA-102 : Database Management System

Teaching Scheme (Per week)		Teaching Scheme (Per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	--	40	4	30	--	70	--	100	--

Unit - I **[18 Marks]**

Database Concepts:

Database and DBMS, Comparison between traditional file V/s DBMS, Characteristics of data in database, Components of database system environment, Functions of DBMS, Advantages and disadvantages of the DBMS, DBMS users, Database administrator, Role of DBA

Unit – II

Database Design and Architecture **[17 Marks]**

Essentials of Database Design, Three level Architecture of Database- external, conceptual and internal, Data Models concepts: Hierarchical, Network and Relational, Operators, relations, domains and attributes, keys, traditional set operations, special relational operations.

Unit - III **[18 Marks]**

The E/R model

Entity, E-R Diagram, Attributes, Relationship & Types, Development stages of E-R diagram & Examples

Normalization

Normalization Process, 1st NF , 2nd NF, 3rd NF, demoralization.

Unit - IV

MS-Access **[17 Marks]**

Introduction of Database,
Data type - Text, Number, Auto number, Currency, Boolean, Date/Time, Memo
Object – Table, Query, Forms, Reports
Controls use in form and report

Books:

1. Database Management System — A C Shah & A R Patel, MacMillan Publication
2. Introduction to Database System — C. J. Date (7th edition) Low Price Edition
3. Database system concepts — Henry F. Korth (3rd edition) TMH Publications

Question Paper Scheme:

University Examination Duration : 3 Hours.

Q.1 - Unit-I (18 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
Q.2 - Unit-II (17 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
Q.3 - Unit-III (18 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
Q.4 - Unit-IV (17 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.

Note: All Objective/ Short Questions are compulsory, no option will be given.

B.C.A. Semester – I

BCA-103 : Computer Organization

Teaching Scheme (per week)		Teaching Scheme (Per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	--	40	4	30	--	70	--	100	--

Unit - 1 **[18 Marks]**

Computer basics

Digital & Analog systems, Logic levels and pulse wave forms, digital computer, Major parts of computer, Hardware, Software - Application and System Software

Computer generations

First generation, Second generation, Third generation, Forth generation, Fifth generation

Classifications of Computers

Palmtop PC, Laptop PC, Personal Computer, Workstations, Mainframe, Supercomputer.

Operating system

Dos, Windows Family

Unit – 2 **[17 Marks]**

Introduction to Computer Parts

Input devices (only principles)

Keyboard, Mouse, Light pen, Joystick, Scanner, Voice input system, Touch screen

Output devices (only principles)

Monitor - CRT terminals (Monitor / VDU)

Non – CRT terminals, LCD, Plasma display, LED

Printer - Dot matrix printer, Ink jet printer, Laser printer, Line printer, Plotter

Storage devices (only principles & types)

Magnetic memory - Magnetic disk, Hard disk, Floppy disk,

Semiconductor memory - RAM, ROM, Flash memory

Optical memory - CD, CD-ROM, CD-RAM, DVD, DVD-ROM, DVD-RAM

Cache memory, Physical & Virtual memory

Communication devices -Modem, NIC, Switch, Hub

Unit - 3 **[18 Marks]**

Number system - Binary, decimal, octal, hexadecimal

Conversion - Binary to decimal, decimal to binary, octal to decimal , decimal to octal, octal to binary, binary to octal, hexadecimal to binary, binary to hexadecimal, hexadecimal to Decimal, decimal to hexadecimal, hexadecimal to octal, octal to hexadecimal

Binary arithmetic – Addition, subtraction (simple method)

Unit - 4 **[17 Marks]**

Logic gates - AND, OR, NOT, NAND, NOR, Exclusive-OR, Exclusive-NOR

Combinational circuits - Half adder, Full adder, Half subtractor, Full subtractor

Binary classification of codes - 8421 BCD code, Excess-3(XS-3) code

Data Processing circuit - Decoder, Encoder

Ref. Books:

1. Fundamentals of computers – By. V. Rajaraman PHI Publication
2. Fundamentals of computers – By. Anand Kumar PHI Publication
3. Fundamentals of computers – By. B. Ram
4. O-Level (Information Technology) - By V.K.Jain (Module- M1.1)
5. Computer Architecture – By K M Hebbar MacMillan Publication

Question Paper Scheme:

University Examination Duration: 3 Hours.

Q.1 - Unit-I (18 Marks)
- A. Objective/ Short Questions.
- B. Descriptive/ Long questions.

Q.2 - Unit-II (17 Marks)
- A. Objective/ Short Questions.
- B. Descriptive/ Long questions.

Q.3 - Unit-III (18 Marks)
- A. Objective/ Short Questions.
- B. Descriptive/ Long questions.

Q.4 - Unit-IV (17 Marks)
- A. Objective/ Short Questions.
- B. Descriptive/ Long questions.

Note: All Objective/ Short Questions are compulsory, no option will be given.

B.C.A. Semester – I
BCA-104 : Communication Skills - I

Teaching Scheme (per week)		Teaching Scheme (Per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	--	40	4	30	--	70	--	100	--

Unit - I **[18 Marks]**

Theory of Communication

- What is communication - define and explain.
- Types of communication.
- Process of communication.
- Feedback.
- Barriers of communication.
- 7c's.of communication.

Unit - II **[17 Marks]**

Grammar

- Articles.
- Tenses.
- Active\ passive voice.
- Auxiliaries and modals.
- Direct and indirect speech.

Unit - III **[18 Marks]**

Business Communication

- Format of the business letter.
- Letter of inquiry and replies.
- Quotation.
- Placing of order.
- Complaints and adjustment.

Unit - IV **[17 Marks]**

Vocabulary

- Confusing words.
- One word substitute.
- Antonyms.
- Synonyms
- Essay Writing

Reference Books:

1. English Online, Mohanraj & Mohanrah, Orient Longman.
2. The Good Grammar Book Swan M & Catherine Walter, Oxford.
3. English Grammar Composition and Effective Business Communication, Pink and Thomas, S Chand.
4. Business Communication, Meenakshi Raman & Sangeeta Sharma, Oxford.
5. Oxford Business English Dictionary, Oxford.
6. Technical Communication: Principles and Practice, Meenakshi Raman & Sangeeta Sharma, Oxford.
7. Developing Communication Skills, Krishna Mohan & Meera Benarji, MacMilan Pub.
8. Personality development and soft skill, Baran Mitra, Oxford.

Question Paper Scheme:

University Examination Duration: 3 Hours.

Q.1 - Unit-I (18 Marks)
Descriptive/ Long questions
Q.2 - Unit-II (17 Marks)
Objective/ Short Questions
Q.3 - Unit-III (18 Marks)
Descriptive/ Long questions
Q.4 - Unit-IV (17 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.

Note: All Objective/ Short Questions are compulsory, no option will be given.

B.C.A. Semester – I

BCA-105 : Fundamentals of Programming Language 'C'

Teaching Scheme (per week)		Teaching Scheme (per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
--	4	40	4	--	30	--	70	--	100

Practical based on Fundamentals of Programming Language 'C'

University Examination Duration: 3 Hours (Per Batch)

(Practical List)

1. Write a C program to display "hello computer" on the screen.
2. Write a C program to print roll no, name and address.
3. Write a C program to find the area of circle using the formula Area=PI * r * r.
4. Write a C program to find the area of rectangle, cube and triangle.(Formula are: Rectangle=l *b*h, triangle = (I * b)* 0.5, cube = L*L*L
5. Write a C program to find the area and volume of sphere. Formulas are Area = 4*PI*R*R Volume = 4/3*PI*R*R*R.
6. Write a C program to evaluate simple interest I = P*R*N / 100.
7. Write a C program to enter a distance into K.M and convert it in to meter, feet, inches and Centimeter
8. Write a C program to interchange two numbers.
9. Write a C program to convert Fahrenheit into centigrade Formula: C= (F-32)/1.8.
10. Write a C program for summation, subtraction, multiplication, division of two number using Arithmetic operator
11. Write a C program to enter days and convert into years, month and reminder days.
12. Write a C program to find out the largest value from given three numbers using conditional Operator
13. Write a C program to find the maximum number from given three numbers.
14. Write a C program to find that the enter number is Negative, or Positive or Zero.
15. Write a C program to Checked whether entered char is capital, small, digit or any special Character
16. Write a C program to read number 1 to 7 and print relatively day Sunday to Saturday.
17. Write a C program to find out the max. and min. number from given 10 numbers.
18. Write a C program to find the sum of digit of accepted number.
19. Write a C program to find the sum of first 100 odd numbers. And even numbers.
20. Write a C program to display first 25 Fibonacci nos.
21. Write a C program to check the accepted number is prime number or not.
22. Write a C program to display first' 100 prime numbers.
23. Write a C program to find factorial of accepted numbers.
24. Write a C program to print accepted no and its reverse number.
25. Write a C program to find whether the accepted number is palindrome or not.
26. Write a C program to convert decimal numbers into equivalent binary number.
27. Write a C program to convert decimal numbers into equivalent to octal number.

28. Write a C program to convert decimal numbers into equivalent hexadecimal numbar.
29. Write a C program to display first 5 Armstrong number.
30. Write a C program to arrange the accepted numbers in ascending order and descending order.
31. Write a C program to find whether the accepted string is palindrome or not.
32. Write a C program to convert given line into upper case or lower case.
33. Write a C program to count no of word, character, line and space from given text.
34. Write a C program to sort given string in ascending order.
35. Write a C program to prepare pay slip using following data.
    Da = 10% of basic, Hra = 7.50% of basic, Ma = 300,
    Pf = 12.50% of basic, Gross = basic + Da + Hra + Ma, Nt = Gross – Pf.
36. Write a C program to read marks and your program will display grade.

Marks	Grade
100 – 80	Dist
60 – 79	First
50 – 59	Second
35 – 49	Pass
0 – 34	Fail

37. Write a C program to find 1+1/2+1/3+1/4+....+1/n.

38. Write a C program to display following output on the screen.

```
1
12
123
1234
```

39. Write a C program to display following output on the screen.

```
1
22
333
4444
```

40. Write a C program to display following output on the screen.

```
1
0 1
1 0 1
0 1 0 1
1 0 1 0 1
```

41. Write a C program to display following output on the screen.

```
    1
   2 2
  3 3 3
 4 4 4 4
5 5 5 5 5
```

42. Write a C program to display following output on the screen.

```
1
2 3
4 5 6
7 8 9 10
```

43. Write a C program to display following output on the screen

```
*
* *
* * *
* * * *
* * * * *
```

44. Write a C program to display following output on the screen.

```
    *
   * *
  *  *  *
 *  *  *  *
*  *  *  *  *
```

45. Write a C program to display following output on the screen.

```
      1
    2   3
  4   5   6
7   8   9  10
11  12 13  14  15
```

46. Write a C program to display following output on the screen

```
C
CP
CPR
CPRO
:
CPROGRAMMING
:
CPRO
CPR
CP
C
```

47. Write a C program to find maximum & minimum value from the given array.
48. Write a C program to find next minimum from the given array.
49. Write a c program to input N and find out the sum, average, max, min, total even no and total odd no. [with out use of array]
50. Write a c program to input N no and find out the sum, average, max, min, total even no and total odd no. [using array]
51. Write a c program to display the two matrix on screen and perform the addition of two matrix and print on screen.
52. Write a c program to display the two matrix on screen and perform the multiplication of two matrix and print on screen.

Practical Exam Scheme:

Program	Output	Viva	Journal	Total
25 Marks	15 Marks	20 Marks	10 Marks	70 Marks

B.C.A. Semester – I

BCA-106 : Database Management System and MS-Office

Teaching Scheme (per week)		Teaching Scheme (per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
--	4	40	4	--	30	--	70	--	100

MS-DOS and WINDOWS

I. DOS Commands

II. Windows Operation System (Windows XP)

MS-Office 2007

MS-Word

MS-Excel

MS-Power Point

MS-Access

- Crate a table using wizard and design view.
- Create a form using wizard and design view.
- Create a report using wizard and design view.
- Create Query using wizard and design view.
- Create project on following system
    - Student Information System
    - Employee Information System

Practical Exam Scheme:

MS- Word/ PowerPoint Practical	MS- Excel Practical	MS- Access Practical	Viva DOS Commands, Windows, MS Office	Journal	Total
15 Marks	15 Marks	15 Marks	15 Marks	10 Marks	70 Marks