BCA –SEMESTER-2

BCA -201 Advance Programming Language – 'C'

Question Paper Scheme: (Total Marks:70)

Q.1 - Unit-I

A) Objective / Short Question   (05 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.2 - Unit-II

A) Objective / Short Question   (06 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.3 - Unit-III

A) Objective / Short Question   (05 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.4 - Unit-IV

A) Objective / Short Question   (06 Marks)

B) Descriptive/ Long questions.   (12 Marks)

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

PROGRAM CODE : HNGU1184

BCA-202: Internet & Web Designing

Question Paper Scheme: (Total Marks:70)

Q.1 - Unit-I

A) Objective / Short Question   (05 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.2 - Unit-II

A) Objective / Short Question   (06 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.3 - Unit-III

A) Objective / Short Question   (05 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.4 - Unit-IV

A) Objective / Short Question   (06 Marks)

B) Descriptive/ Long questions.   (12 Marks)

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

BCA-203: Discrete Mathematics

Question Paper Scheme: (Total Marks:70)

Q.1 - Unit-I

A) Objective / Short Question   (05 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.2 - Unit-II

A) Objective / Short Question   (06 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.3 - Unit-III

A) Objective / Short Question   (05 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.4 - Unit-IV

A) Objective / Short Question   (06 Marks)

B) Descriptive/ Long questions.   (12 Marks)

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

BCA-204: System Analysis and Design

Question Paper Scheme: (Total Marks:70)

Q.1 - Unit-I

A) Objective / Short Question   (05 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.2 - Unit-II

A) Objective / Short Question   (06 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.3 - Unit-III

A) Objective / Short Question   (05 Marks)

B) Descriptive/ Long questions.   (12 Marks)

Q.4 - Unit-IV

A) Objective / Short Question   (06 Marks)

B) Descriptive/ Long questions.   (12 Marks)

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

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Bachelor Of Computer Application (W.E.F. JUNE : 2018)						
Update on : MAY-2018						
SEM : I						
PAPER NO	NAME OF SUBJECT	Evaluation Weightage			Credit
		Internal	External	Total	
BCA -101	Fundamentals of Programming Language 'C'	30	70	100	4
BCA -102	Database Management System	30	70	100	4
BCA -103	Computer Organization	30	70	100	4
BCA -104	Communication Skills	30	70	100	4
	Practicals				
BCA -105	Fundamentals of Programming Language 'C'	30	70	100	4
BCA -106	Database Management System and PC- Packages	30	70	100	4
	Total :	180	420	600	24
SEM : II						
PAPER NO	NAME OF SUBJECT	Evaluation Weightage			Credit
		Internal	External	Total	
BCA -201	Advanced Programming Language 'C'	30	70	100	4
BCA -202	Internet & Web Designing	30	70	100	4
BCA -203	Discrete Mathematics	30	70	100	4
BCA -204	System Analysis and Design	30	70	100	4
	Practicals				
BCA -205	Advanced Programming Language 'C'	30	70	100	4
BCA -206	Internet & Web Designing	30	70	100	4
	Total :	180	420	600	24

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)
04	---	40	04	30		70		100	

Unit- 1 User-defined Function: [18 Marks]

Introduction, Need for User define function, Arguments and return types, Classifications of function using arguments and return types, Nesting of functions, Recursion, Functions with arrays, The scope and lifetime of variables in functions.

Unit- 2 Structures & Unions: [17 Marks]

Introduction, defining a structure, giving values to members, Structure initialization, copying and Comparison of structures variables, Arrays of structures, Arrays within structures, Structures within Structures, Structures and functions, Unions, Size of structures, Bit fields.

Unit- 3 Pointers: [18 Marks]

Introduction, Understanding pointers, Advantage of using pointer, Accessing the address of a variable, Declaring and initializing pointers, Accessing a variable through pointer, Pointer expressions, Pointer increments and scale factor, Pointers and arrays, Pointers and character strings, Pointers and Functions, Pointers and structures.
Dynamic Memory Allocation and Linked List: Introduction, Dynamic Memory allocation, Memory allocation functions (malloc, calloc).

Unit- 4 File Management in C: [17 Marks]

Introduction, creating and opening a file, closing a file, Input / Output operations on files, Error handling during I/O operations, Random access files and Command line arguments.
The Preprocessors: Introduction, Types of Preprocessors Directives.
Macro: Introduction, Format of Macro, Simple Macro Substitution, Argument, Macro Substitution, Nested Macro Substitution, File inclusion, Compiler control directives

List of References:
1. Programming in ANSI C, By E Balaguruswami, Tata McGraw-Hill Publishing Company Limited.
2. Programming with C, By Bayron Gottfried, Tata McGraw-Hill Edition.
3. Let Us C, By Yashavant Kanetkar, BPB Publications.
4. Working with C, By Yashavant Kanetkar, BPB Publications.

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PATAN

Question Paper Scheme:

University Examination Duration: 3 Hours.

Q.1 - Unit-I
    Descriptive/ Long questions.   (12 Marks)
Q.2 - Unit-II
    Descriptive/ Long questions.   (12 Marks)
Q.3 - Unit-III
    Descriptive/ Long questions.   (12 Marks)
Q.4 - Unit-IV
    Descriptive/ Long questions.   (12 Marks)

Q.5 - Programs

  A. Unit I, II, III & IV-Objective / Short
  Question B. Unit I, II, III & IV -   (12 Marks)
  Programs   (10 Marks)

Note: Option should be given in all questions.

Hemchandracharya North Gujarat University, Patan
B.C.A Semester – II
BCA-202: Internet & Web Designing

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]
Concept of Internet:
A brief Introduction to the Internet: Computer Networks, Internet, URL (Uniform Resource Locator), Internet Service Provider, Intranet, Extranet, Virtual Private Network.
Application of Internet: World Wide Web, Search Engines, News groups, Electronic Mail, Web Portal, Chat, Video Conferencing, FTP, Remote Login, E-Commerce, E-Learning, E-Governance, E-Banking.

Unit-II [17 Marks]
Static Web Page Development
Basic Of HTML: What is Internet Language? , What is HTML tag? , Web Page and its Types, Publishing HTML Pages, Basic Tags.
Introduction to HTML:
HTML document Structure, Adding text in Newline
, Creating heading: <H1> to <H6>, Creating a paragraph<P>--</P>, Creating a Horizontal ruler<HR>--</HR>, Scrolling text <marquee>--</marquee>, Linking to other page :< a> and <link> tags, Text fomenting tags, Font tag with attribute, Working with List tags<OL> and <UL>,Creating Table: Related tags with attribute, Creating HTML From with adding controls, Frame and frameset tag, Putting Graphics on a Web page, Custom Background and colors.

Unit-III [18 Marks]
Dynamic Web page Development
Cascading Style Sheet: Defining Style with HTML tags, Features of Style sheet, Types of Style Sheets: External, Internal, and Inline, Style Properties, Style Class & ID Selector.

Unit-IV [17 Marks]
JavaScript
Introduction to JavaScript: Writing First Java Script, HTML and Java script, Variables: Rules for variable names, declaring the variable, assign a value to a variable, Scope of variable, Using Operators, Control Statements, JavaScript loops. Types of JavaScript: External, Internal. JavaScript Functions: Defining a Function, Returning value from function, User Define Function.

Text Books:
1. Internet and Web Design
    Based on DOEACC III Revised syllabus 'O' Level
    Mac Millan India Ltd.
2. Teach Yourself HTML 4 in 24 Hours By Dick Oliver
    (Tech media) 4th edition

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Question Paper Scheme:

University Examination Duration: 3 Hours.

Q.1 - Unit-I   (12 Marks)
     Descriptive/ Long questions.
Q.2 - Unit-II   (12 Marks)
     Descriptive/ Long questions.
Q.3 - Unit-III   (12 Marks)
     Descriptive/ Long questions.
Q.4 - Unit-IV   (12 Marks)
     Descriptive/ Long questions.

Q.5 -

    A. Unit I, II, III & IV-Objective / Short Question   (10 Marks)
    B. Unit I, II, III & IV - Objective / Short Question   (12 Marks)

Note: Option should be given in all questions.

Teaching Scheme (Per Week)		Teaching Scheme (Per Semester)		Examination Scheme					
				Internal		External		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	--

Detail Syllabus

Unit-I   Set Theory   **[18 Marks]**

Definition and notation of Set, Methods of representation of set (Property and List Method),
set of numbers (Natural, Integers, Rational, Irrational, Real),

Definition: Finite set, Infinite set, Empty set, Singleton set, Subset, Proper subset of a set,
Power set, Universal set, Complement of a set, Cardinality of set, Venn Diagrams,

Set Operations: Union of two sets, Intersection of two sets, Disjoint sets, Equality of sets, Equivalent sets, Difference set, Symmetric Difference set, Cartesian product of sets,

Properties of set operations (Commutative, Associative, Distributive, De-Morgan's laws)

Unit-II   Function   **[17 Marks]**

Introduction of Function, Definition of function, Domain, Co-domain, Image and Range of function,

Types of function(with example): Linear, Quadratic, Polynomials, Rational, Irrational, Single value and Many value, Even and Odd, Explicit and Implicit,

The Classification of functions: one-one, many-one, onto, into function,

Evaluation of function, Composition of functions, Identity function,

Mathematical functions (Definition with example): Floor and Ceiling function, Integer and Absolute value function, Remainder function, Exponential function, logarithm function and its properties, Recursive function.

Unit-III   Matrices and Determinants   **[18 Marks]**

Introduction and Definition of Matrix,

Types of matrices: Row and Column matrices, Square matrix, Diagonal matrix, Scalar matrix, Identity matrix, Null matrix, Symmetric and Skew-symmetric matrices, Triangular matrix (Upper triangular matrix and Lower triangular matrix), Transpose of a matrix, Equality of matrices,

Arithmetic Operations: Addition, Subtraction, Scalar Multiplication, Multiplication of Matrices, Orthogonal Matrix,

Representation of a matrix as a sum of a Symmetric and Skew-symmetric matrices

Introduction of Determinants with basic properties, Invertible matrix, Co-factor matrix, Adjoint Matrix, Computation of Inverse matrix using definition

Simultaneous solution of set of linear equations using matrix inversion method for two and three variables

Unit-IV   **Sequence and Series**   **[17 Marks]**

Introduction to Sequence and Series, Representation of Sequence and Series,

Progression:
Arithmetic Progression(A.P.), Common difference, nth term of an A.P., The sum of first n terms of an A.P.,
Geometric Progression(G.P.), Common Ratio, nth term of a G.P., The sum of first n terms of a G.P.,
Harmonic Progression(H.P.), Relationship between Arithmetic, Geometric and Harmonic Mean

Reference Books:

1. Discrete Mathematics -Revised 3rd Edition   Authors: **Seymour Lipschutz** and **Marc Lars Lipson,**

   Publication: McGraw-Hill Education (India) Pvt Limited

2. Elements of Discrete Mathematics -3rd Edition   Authors: Chung Laung Liu and Durga Prasad Mohapatra

   Publication: McGraw-Hill Education (India) Pvt Limited

3. Discrete Mathematics -3rd Edition   Author: J. K. Sharma

   Publication: Macmillan Publishers India Limited

4. Business Mathematics -Latest Edition   Authors: D. C. Sancheti and V. K. Kapoor

   Publication: Sultan Chand & Sons

Question Paper Scheme:

University Examination Duration: 3 Hours.

Q.1 - Unit-I   (12 Marks)
    Descriptive/ Long questions.
Q.2 - Unit-II   (12 Marks)
    Descriptive/ Long questions.
Q.3 - Unit-III   (12 Marks)
    Descriptive/ Long questions.
Q.4 - Unit-IV   (12 Marks)
    Descriptive/ Long questions.
Q.5 - Programs

  A. Unit I, II, III & IV-Objective / Short Question   (10 Marks)
  B. Unit I, II, III & IV - Objective / Short Question   (12 Marks)

Note: Option should be given in all questions.

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)
04	---	40	04	30	--	70	--	100	--

Unit - I [18 Marks]

System Analysis Fundaments: Introduction to System, System Analysis and Design, Need for System Analysis and Design, Types of System, Role of the System Analyst.
System Development Strategies: SDLC, Structured Analysis Development Method, System Prototype Method.
Fact-Fining Techniques: Interview, Questionnaire, Record Review, Observation.
Data Flow Diagram: Advantages, Notations, Rules, Logical and Physical DFD.
Data Dictionary: Importance and detail
Structured Decisions: Decision Tree, Decision Tables, Structured English

Unit – II [17 Marks]
 The Essentials of Design
Code Design: Principle of Code Design, Types of code
Output:
Principle of output, types of output ,output media
Form Designing:
Objectives, Guideline for Form design, Types of form
Designing User Interface:
Objectives, Types of user interface
Check Digits, Data Validation and Data Verification
Case Tools: Benefits of Computer-Assisted Tools, Categories of Automated Tools, Case Components.

Unit - III [18 Marks]
System Engineering and Quality Assurance: System Engineering Definition, Quality assurance: definition and need, **Design of software:** Importance, Software design principles, **Software design and documentation tools:** Structure Flowchart, HIPO, Warier /Orr Diagrams. **System key concepts**: Testing, System conversion, Documentation. **Managing System Implementation**

Unit - IV [17 Marks]
Case Studies
Financial Accounting System,
Payroll System,
Library System,
Inventory / Stock System,
Railway Reservation System,
(Input, Output, DFD)

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Text Book:

1. **Analysis & Design of Information Systems,** James A. Senn
2. **System Analysis & Design, 1st Edition,** S.Parthasarthy & B.W.Khalkar
3. **Introduction to S.A.D,** LEE VOL. 1 & 2

Question Paper Scheme:

University Examination Duration: 3 Hours.

Q.1 - Unit-I	(12 Marks)	
Descriptive/ Long questions.		
Q.2 - Unit-II	(12 Marks)	
Descriptive/ Long questions.		
Q.3 - Unit-III	(12 Marks)	
Descriptive/ Long questions.		
Q.4 - Unit-IV	(12 Marks)	
Descriptive/ Long questions(Case Studies).		
Q.5 -		

  A. Unit I, II, III & IV-Objective / Short Question   (10 Marks)
  B. Unit I, II, III & IV - Objective / Short Question   (12 Marks)
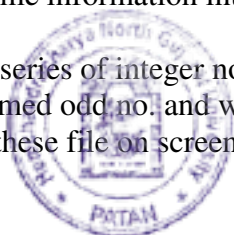
Note: Option should be given in all questions.

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

1. Write a program to check the given number is Palindrome or not using User Defined Function (UDF).
2. Write a program to find factorial of given no using UDF.
3. Write a program to find factorial of given no using recursion.
4. Write a program to display first 25 terms of Fibonacci series using recursion.
5. Write a program using a recursive function to find the GCD (Greatest Common Divisor) of two Positive integer numbers.
6. Write a program to swap value of two integer number using UDF.
7. Write a function prime that returns 1 if its argument is a prime and return zero Otherwise.
8. Write a program that uses a UDF to sort an array of integer.
9. Write a program which explains the use of nesting of functions.
10. Define a structure type struct personal that would contain person name, date of joining and salary using this structure to read this information and Display on screen.
11. Design a structure student_records to contain Roll_no, Name, City and Percentage obtained. Develop a program to read data for 5 students and Display them.
12. Write a program using structure within structure.
13. Write a program using structure within Function.
14. Write a program declare following structure member: name, code, age, weight and height. Read all members of the structure for 10 persons and find list of persons with all related data whose weight > 50 and height > 40 and print the same with suitable format and title.
15. Write a program to use of pointer in arithmetic operation.
16. Write a program to accept 10 numbers and display its sum using pointer.
17. Write a program to accept 10 numbers and sort them with use of pointer.
18. Write a program to swap the two values using pointers and UDF.
19. Write a program with structure and pointer.
20. Write a program using pointer to determine the length of a character string.
21. Write a program using pointers to read an array of integers and print its elements in reverse order.
22. Write a program using UDF and pointers to add two matrices and to return the resultant matrix to the calling function.
23. Create one text file store some information into it and print the same information on Terminal.
24. A file named data contains series of integer no. Write a c program to read that no. and then write all odd no into file named odd no. and write all even no into file named even no. Display all the contents of these file on screen.

25. Write a c program to read data from keyboard write it to a file called input and Display data of input file on the screen.
26. Write a program that counts the number of characters and number of lines in a file.
27. Write a c program to read mark data which contains roll no, name, sub1, sub2, sub3 file and generate the annual examination results are tabulated as follows:

Result

```
------------------------------------------------------------------
Roll no        Name  Sub1  Sub2  Sub3  Total  per     % Class
------------------------------------------------------------------
```

28. Write a c program to input employee no, employee name and basic and to store output into empdata file in following format.

A/c Department

```
---------------------------------------------------------------------------------
Emp-No        Name  Basic  DA    HRA   MA    PF    GROSS        NET-PAY
---------------------------------------------------------------------------------
1             xyz    5000  2500  500   100   500   8100         7600
2
3
---------------------------------------------------------------------------------
```

DA = 50% of Basic HRA =10% of Basic
MA = 100 PF = 10% of Basic
GROSS = BASIC + DA + HRA + MA NET-PAY = GROSS – PF

29. Write a c program to read empin data file which contains empno, empname and basic. To create empout data file as per practical no 33 format.
30. Write a program using fseek and ftell functions.
31. Two files DATA1 and DATA2 contain sorted lists of integers. Write a program to produce a third file DATA which holds a single sorted, merged list of these two lists. Use command line arguments to specify the file names.
32. Write a C program to work as a dos type command using command line argument.
33. Write a C program to work as a dos copy command using command line argument.
34. Write programs which explain the use of memory allocation functions.
35. Write a program which explains the use of macro.

Practical Exam Scheme:

Practical	Viva	Journal	Total
40 Marks	20 Marks	10 Marks	**70 Marks**

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Hemchandracharya North Gujarat University, Patan
B.C.A Semester – II
BCA-206: Internet & Web Designing (Practical)

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

University Examination Duration: 3 Hours (per Batch)

(Practical List)

1. Develop an HTML document for a web page of your favorite teacher. Design the page With an attractive background color, text color and background image..
2. Develop an HTML document for a web page of your favorite National Leader. Design the page with an attractive color combination, with suitable headings and horizontal rules.
3. Write an HTML document with an example of Ordered List and Unordered List.
4. Write an HTML document with an example of Ordered List and Unordered List Using Nested list.
5. Write an HTML document with an example of Table format to print your Bio-Data.
6. Write an HTML document to create complex Table like Telephone Bill, Mark sheet, Time-table.
7. Write the Frameset tags and Frame tags for the following frameset.

Physics.html	Welcome.html	Maths.html
Chemistry.html		Computer.html
Biology.html		
Zoology.html	Heading.html	Account.html

8. Develop a complete web page using Frames and Frameset which gives the Information about Hospital.
9. Write an HTML code for designing the subscription form of mail account in the e-mail Website with appropriate fields.
10. Write an example of External Style Sheet.
11. Write HTML program which contains Inline Style sheet for <p>, <h1> and <body> tags.
12. Write HTML program which contains Internal Style sheet for <p>, <h1> and <body> tags.
13. Describe yourself on a webpage and experiment with colors in bgcolor, text, and link, try out different and sizes and also the other tags you studies so far, such as the rules tag as well as.
14. Write a HTML code to designate a section of text that is already formatted for display Preformatted text is usually used for compute output.
    Solution

```
<BODY>
<P> C Programme</p>
<Pre>
#inc1ude<stdio.h>
Void main 0
{
Printf ("Hello world");
}
</Pre>
</BODY>
```

15. Write HTML code to develop a web page having background in blue and title "Wel come to my home page" in red other color.
16. Create an HTML document of giving details of your name, age, telephone no, address and enrolment no, aligned in proper order.
17. Calculate a web page that provides links to five different web page or to entirely different websites.
18 .Write a HTML code for making table to containing different option for different questions.

Which is your favorite color	Who is your national leader	Who is the highest test centuries person in india
Red	Sardar Patel	Sunil Gawskar
Green	Gandhiji	Kapil Dev
Yellow	Indiraji	Sachin tendulkar
Blue	Nehruji	Ajay Jadeja

19. Create form to fill information student.
20. Create a JavaScript code to display any message.
21. Create a JavaScript code using Arithmetic Operator, Assignment Operator, Comparison Operator, Logical Operator and String Operator.
22. Create a JavaScript code using Control Statement.
23. Create a JavaScript code to display
    5*1=5
    5*2=10

    5*10=50 using for loop.
24. Create a JavaScript code using User Defined Function which will calculate the area of circle.
25. Write a JavaScript code to change the background color of the web page.
26. Write a JavaScript code to display Factorial of the given number.

Practical Exam Scheme:

Practical HTML	Practical JavaScript	Viva	Journal	Total
25 Marks	15 Marks	20 Marks	10 Marks	**70 Marks**