आधार पाठ्यक्रम: प्रथम प्रश्नपत्र- हिन्दीभाषा

UHINDCA-201

Total Marks-40+60
Passing Marks-16+24
Sub. Type- AECC (Credit-4)
व्याख्यान: ९० घंटा
आधार: आधार पाठ्यक्रम में अपेक्षित कि १२वीं उत्तीर्ण क्षकर्ा भी मुह रे |

(भाग-ए) पररचय

वर्सेअहधगम उपलहधध (लहनिंग आउटकम) (CLO)

1. उल्क्र ृक्षात्मक पाठों के अध्यन रे स्थि का क्षकार् करना |
2. र्ंस्कृक्षतक ि ना और राष्ट्रीय भावना का क्षवकार्करना |
3. भाषा-ज्ञान
4. र्ामान्य शब्दावली और क्षवशेष शब्दावली के अध्यन द्वारा भाषा एवं र्ंस्कृक्षत बोध का क्षकार् करना |
5. क्षवक्षशष्ट शब्दावली (बीजशब्द / कीवर्ड) रे परीक्षित करवाते हुबोध के स्तर को क्षवकक्षर्त करना |

(भाग-बी) वर्सेर्ामग्री क्रेहिट-4

इकाई – एक

1. मैक्षिलीशरणगुप्त परीरिय पाठ: मातृभूक्षम
(कक्षवता)
2. प्रेमि: परीरिय
पाठ: शतरंज के क्षिलाड़ी (कहानी)
3. र्ंय: शरद जोशी–जीप पर र्वार इक्षल्लयाँ

इकाई – दो

1. वैक्षिरक-भारतीय भाषाओं में राम
2. आचार्य रामिन्द्र शुक्ल: परीरिय पाठ: उल्क्राह
(भावमूलकक्षनबंध)
3. रामधारी क्षर्ंह क्षदनकर: परीरिय पाठ: भारत एक है
(र्ंस्कृक्षत)
4. आक्षद शंकराचार्य-जीवन व दशसन

इकाई – तीन

1. पयासयवाची शब्द; क्षवलोमशब्द; अनेक शब्द के क्षलए एक शब्द (क्षहन्दी व्याकरण)
2. र्ंधि और उर्के प्रकार (क्षहन्दी व्याकरण)
3. बीजशब्द- द्वैत अद्वैत, भाषा , अवधारणा, उदारीकरण |

इकाई- चार

1. भगवान बुद्ध (क्षनबांध) - स्वामीक्षविवेकानंद
2. लोकतंत्र एक ष (क्षनबंध) र्ा. वेंसपतलीराधाकृष्णन
3. नहीं रूकती है नदी - हीरालाल बालोक्षिया
4. पलवन

र्ारहबन्दु

मैक्षिलीशरणगुप्त: मैक्षिलीशरणगुप्त क्षक कक्षवता ष्प्रेमिर : प्रेमिर शतरंज के क्षिलाड़ी
रामधारीक्षसंह क्षदनकर : भारत एक है रामधारी क्षसंह क्षदनकर आियस रामित्र शुक्ल :
उत्कृहक्षनबंधरामिन्रशुक्ल स्वामी क्षववेकानंद : ष क्या है (क्षशकागोव्याख्यान)
अव्दैत
भाषा क्षवकार भाषा
परभाषा
उदारीकरण की क्षवशेषता पयासयवाची
शब्द क्षवलोम शब्द
अनेक शब्द के क्षलए एक शब्द संक्षेप

भाग- र्ी, र्न्दभसपुस्तकें

पाठ्यपुस्तकें , र्न्दभसपुस्तकें, अन्यसंदर्भ
1.प्रेमिर - मानसरोवर , िंड: 3
2. आियसराम त्रिपुक्त- क्षिन्तामक्षण, भाग 1
3. र्ा. वासुदेवनन्दनप्रसाद: आधुक्षनक क्षहन्दी व्याकरण और रिना , भारती भवन, ठाकुर बाड़ी रोड, पटना, क्षबहार
4. र्ा. राजेश्वर क्षत्रवेदी, क्षहन्दी व्याकरण- रूपकरण प्रकाशन, आगरा, उ.प्र.
5. हिंदी ज्ञानकोश
6. इंटरनेट सामग्री- टैग में उल्लेक्षित

PART D: Assessment and Evaluation			
Internal Assessment : Continuous Comprehensive Evaluation (CCE) : 40 Marks Shall be based on allotted assignments and Class Tests. The marks shall be as follows:		External Assessment: University Exam (UE) : 60 Marks Time : 03.00 Hours	
Assessment and presentation of assignment	10 Marks	Section (A) : Five Very Short Questions (50 Words Each) OR MCQ Questions	05 x 02 = 10 Marks OR 10 x 01 = 10 Marks
Class Test I (Objective Questions)	10 Marks		
Class Test II (Descriptive Questions)	10 Marks	Section (B) : Five Short Questions (200 Words Each)	05 x 06 = 30 Marks
Class Test III (Based on OS commands)	10 Marks	Section (C): Two Long Questions (500 Words Each)	02 x 10 = 20 Marks
Total	40 Marks	Total	60 Marks

Any remarks/suggestions:

PART A: introduction

Program: Certificate Class: B.C.A. Year: 1 Year Session:

1.	Course Code	**UPROGCA202**
2.	Course Title	Programming Methodology & Data Structures
3.	Course Elective	Major — Paper **II**
4.	Pre-Pre Requisite (if any)	To study this course, a student must have basic knowledge of Corn niters.
	Course Learning Outcomes(CLO)	**After the completion of this course, a successful student will be able to do the following:** 1. Develop -simple algorithms and flow charts to solve a problem with programming using top down design principles. 2. Writing efficient and well structured computer 3. algorithms/programs. 4. Learn to 'formulate iterative solutions and array processing algorithms for problems. 5. Use recursive techniques, pointers and searching methods in programming. 6. Will be familiar with fundamental data structures, their implementation; become accustomed to the description of algorithms in both functional and procedural styles. 7. Have knowledge of complexity of basic operations like insert, delete, search on these data structures. 8. Possess ability to choose a data structure to suitably model any data used in computer applications. . 9. Assess efficiency tradeoff's among different data structure implementations. 10. Implement and know the applications of algorithms for searching. and sorting. 11. Know the contributions of Indians in the field of programming and data structures.
	Credit Value	**Theory --4** Credits Practical — **2 Credits**
	Total Marks	Max. Marks : 40+60 Min. Passing Marks: 16+24

PART B: Content of the Course

No. of Lectures	(in hours per week): **2 :Hrs. per week** Total No. of Lectures: **60 Hrs.**

	Topics	No. of Lectures
Module I	Introduction to Programming Pogramming, Stages Design, - Program Concept, Characteristics of in Program Development, Algorithms, Notations,	8

	Basics of C++: A Brief History of C++, Application.. of C++, Compiling & Linking, Tokens, Keywords, Identifiers & Constants , Basic Data Types, User-Defined Data Types, Symbolic Constant, Type Compatibility, Reference Variables, Operator in C++, Scope Resolution Operator, Member Dereferencing Operators, Memory Management Operators, Manipulators, Type Cast Operator. Functions In C++: The Main Function, Function Prototyping, Call by Reference Call by Address, Call by Value, Return by Reference, Inline Function, Default Arguments, Constant Arguments,. Function Overloadinc!, Function with Array.	
II	Classes & Objects: A Sample C++ Program with class, Defining Member Functions, Making an Outside Function Inline, Nesting of Member Function's, Private Member Functions, Arrays within a Class, Memory Allocation for Objects, Static Data Members, Static Member, Functions, Array of Objects, Object as Function Arguments, Friend Functions, Virtual functions, Returning Objects, Constant member functions. Pointer to Members, Local Classes. Constructor & Destructor: Constructor, Parameterized Constructor, Multiple Constructors in a Class, Constructors with Default Arguments, Dynamic Initialization of Objects, Copy Constructor, Dynamic Constructor and Destructor.	10
III	Inheritance: Defining Derived Classes, Single Inheritance, Making a Private Member inheritable, Multilevel Inheritance, Hierarchical Inheritance, Multiple Inheritance, Hybrid Inheritance, Virtual Base Classes, Abstract Classes, Constructor in Derived Classes, Nesting of Classes. Operator Overloading & Type Conversion, Polymorphism, Pointers, Pointers with Arrays C++, Streams, C++ Stream Classes, Unformatted I/O Operation, Formatted I/O Operation, Managing Output with Manipulators, Exception Handling.	**8**
IV	Data Structure: Basic concepts, Linear and Non-Linear data structures Algorithm Specification: Introduction, Recursive algorithms, Data Abstraction, Performance analysis. Arrays: Representation of single, two-dimensional arrays, triangular arrays, sparse matrices-array and linked representations. Stacks: Operations, Array and Linked Implementations, Applications-Infix to Postfix Conversion, Infix to Prefix Conversion, Postfix Expression Evaluation, Recursion Implementation. Queues: Definition, Operations, Array and Linked Implementations. Circular Queue-Insertion and Deletion Operations, Dequeue (Double Ended Queue), Priority Queue- Implementation.	
V	Linked Lists: Singly Linked Lists, Operations, Concatenating, circularly linked lists-Operations for Circularly linked lists, Doubly Linked Lists- Operations, Doubly Circular Linked List, Header Linked List Trees: Representation of Trees, Binary tree, Properties of Binary Trees, •Binary Tree Representations- Array and Linked Representations,	

	Binary Tree Traversals, Threaded Binary Trees. Heap: Definition, Insertion, Deletion.	
VI -	Graphs: Graph ADT,Graph Representations, Graph Traversals, Searching. Hashing: Introduction, Hash tables, Hash functions, Overflow Handling. Sorting: Bubble Sort, Selection Sort, Insertion Sort, Quick Sort, Merge Sort, Comparison of Sorting Methods, Search Trees: Binary Search Trees, AVL Trees- Definition and Examples.	10
VII	**Indian Contribution to the field:** Innovations in India, origin **of** Julia Programming Language, Indian Engineers who designed new programming languages, open source languages, Dr. Sartaj Sahni - computer scientist - pioneer of data structures, Other relevant contributors and contributions.	

PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings

Textbooks:

J. R. Hanly and E. 13. Koffman, "Problem. Solving and Program Design in C", Pearson, 2015

E. Balguruswamy, "C++ ", TMH Publication ISBN 0-07-462038-X

Herbert Shildt, 'C++ The Complete Reference "TINAH Publication ISBN 0-07-463880-7

- **Reference Books:**

- **R.** Lafore, 'Object Oriented Programming C4-1-"
- N. Dale and C. Weems, "Programming and problem solving with C+-4- brief edition", Jones & Bartlett Learning.
- Adam Drozdek, "Data Structures and algorithm in C++", Third Edition, Cengage Learning.

Sartaj Sahani, "Data Structures, Algorithms and Applications with C++", McGraw Hill.

Robert L. Kruse, "Data Structures and Program Design in C++", Pearson.

D.S. Malik, Data Structure using C++", Second edition, Cengage Learning.

- M. A. Weiss, "Data structures and Algorithm Analysis in C", 2nd edition, Pearson.
- Li Ischutz, "Schatun's outline series Data structures", Tata McGraw-Hill

Suggestive digital platform web links

youtube

Suggested equivalent online courses

S.No.	Online Course	Duration	Plat form
1	Programming in C++	8 weeks	NPTEL
	Beginning C++ - From Beginner to Beyond	Sell paced	Udemy

<table>
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Part A Introduction		
Program: Certificate Course	**Class:** BCA I Year	**Year:** **Session:** ……
1	Course Code	**UNUMECA203**
2	Course Title	Numerical Methods
3	Course Type	Elective
4	Pre-requisite (if any)	Open for All
5	Course Learning Outcomes (CLO)	The course will enable the students to: 1. Understand numerical methods to find the solution of a system of linear equations. 2. Compute interpolation value for real data. 3. Find quadrature by using various numerical methods. 4. Solve system of linear equations by using various numerical techniques. 5. Obtain solutions of ordinary differential equations by using numerical methods.
6	Credit Value	**Theory:6 Credit**
7	Total Marks	Max. Marks: 40 + 60 Min. Passing Marks: 16+24

Part B - Content of the Course		
Total No. of Lectures (in hours per week):3 hours per week **Total Lectures:90** hours		
Unit	Topics	No. of Lectures
1	**Methods for Solving Algebraic and Transcendental Equations:** Bisection Method, Regula Falsi Method, Secant Method, Newton-Raphson Method, Ramanujan Method.	18
II	**Interpolation:** Lagrange interpolation, Finite difference operators, Interpolation formula using Differences, Gregory-Newton Forward Difference Interpolation, Gregory-Newton Backward Difference Interpolation.	18
III	**Numerical Integration:** Newton- Cote's formulae, Trapezoidal rule, Simpson's 1/3 rule, Simpson's 3/8 rule, Gauss Integration.	12
IV	**Methods to Solve System of Linear Equations:** Direct method for solving system of linear equations: Gauss elimination, LU decomposition, Cholesky decomposition. Iterative method:Jacobi, Gauss-Seidel.	21
V	**Numerical Solution of Ordinary Differential Equations:** Single step methods: Picard, Taylor's series, Euler, Runge-Kutta. Multistep methods: Predictor-corrector, Modified Euler, Milne-Simpson.	21
Keywords/Tags: Algebraic and transcendental equations, Interpolation, Numerical Integration, Gauss elimination method, LU decomposition, Jacobi method, Gauss-Seidel method, Picard method, Runge-Kutta method, Predictor-corrector method, Milne-Simpson method.		
Remark: Scientific calculator will be allowed during examination.		

Part C - Learning Resources

Text Books, Reference Books, Other Resources

Suggested Readings:

Text Books:

1. S. S. Sastry: Introductory Methods of Numerical Analysis, Prentice Hall India Learning Private Limited, Fifth edition, 2012.
2. E. Balagurusamy: Numerical Methods, Tata McGraw Hill Publication, 2017.

Reference Books:

1. M. K. Jain, S. R. K. Iyengar, R. K. Jain, Numerical Method for Scientific and Engineering Computation, New Age International (P) Ltd., 1999.
2. Saxena H. C.: Finite Differences & Numerical Analysis, S Chand, 2010.

Suggested Digital Platforms Web links:

https://epgp.inflibnet.ac.in

https://www.highereducation.mp.gov.in

Suggested Equivalent online courses:

https://nptel.ac.in/courses/111106101/

https://nptel.ac.in/courses/111107105/

https://nptel.ac.in/courses/111107107/

https://ugcmoocs.inflibnet.ac.in/index.php/courses/view_pg/1476

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Part A Introduction		
Program: Certificate Course	**Class:** BCA I Year	**Year:** **Session:** ……
1	Course Code	**UPUBLCA204**
2	Course Title	Public Administration – Principles
3	Course Type	Generic Elective
4	Pre-requisite (if any)	Open for All
5	Course Learning Outcomes (CLO)	The course will enable the students to: 1. Acquire the knowledge of administrative practices and functioning of administration. 2. Learn about the key concept of academic discipline of Public Administration 3. Understanding the role of public administration as the main instrument to achieve development goals.
6	Credit Value	**Theory:6 Credit**
7	Total Marks	Max. Marks: 40 + 60 Min. Passing Marks: 16+24

Part B - Content of the Course		
Total No. of Lectures (in hours per week):3 hours per week **Total Lectures:90** hours		
Unit	Topics	No. of Lectures
1	1. Unit- Introduction of Public Administration: Meaning, Nature, Scope and Importance of Public Administration. New Public Administration. Public and Private Administration. New Public Management (NPM), Recent trends in Public Administration.	18
II	2. Unit- Organizational Structure: Chief Executive- Meaning, Types of Executive, Functions and Powers. Line and Staff Agencies – Meaning, Types and Functions, Distinction between the line and staff. Principles of Organization: Meaning, Types of organization formal and in formal	18
III	3. Unit- Personnel Administration: Meaning, Objectives, Importance, Main features and Problem of Personnel Administration. The concept of Bureaucracy – Meaning, Views of Max Weber on Bureaucracy, Types of Bureaucracy, Characteristics, Merits and Demerits. Recruitment, Training, Promotion, Union Public Service Commission in India – Organization, Powers and Role.	12
IV	4. Unit- Financial Administration : Meaning and Definition, Principles of Budget, Budgeting process in India, Budgetary Control, Accounting and Auditing, Comptroller and Auditor General.	21
V	5. Unit- Citizen and Administration: People's Participation in Administration – Need of People's Participation, Dimensions of Participation. Areas of participation of people, Forms and Methods of Participation. Civil Society – Concept and its Role. Public Relations – Meaning and Need of Public Relations, Means of Public Relations. The concept of Good Governance and its features E-Governance – Features, Advantages, Challenges.	21

Keywords/Tags:
Public Administration, Organization, Bureaucracy, Budget, People's Participation
Remark:

Part C - Learning Resources
Text Books, Reference Books, Other Resources

Suggested Readings:

1. Avasthi,A and Maheshwari, S.R.Public Administration. Lakshmi Narain Agarwal: Agra
2. Basu, Rumki; Public Administration: Concept and Theories, Sterling Publishers, New Delhi
3. Bhagwan, Vishnoo; Bhushan, Vidhya and Mohla, Vandana Public Administration. S Chand: Jalandhar.
4. Bhambri,C.P.Public Administration Theory and Practice (21 st Edition). Educational Publishers: Meerut
5. Bhattacharya, Mohit New Horizons of Public Administration. Jawahar Publishers and Distributer: New Delhi.
6. Bhattacharya, Mohit Public Administration. World Press: Calcutta.
7. Bhattacharya, Mohit Public Administration; Issues and Perspective. Jawahar Publishers and Distributer; New Delhi.
8. Chakrabarty, Bidyut and Chand, Prakash Public Administration in a Globalizing World: Theories and Practices. Sage: New Delhi.
9. M.Laxmikant Public Administration McGrawHill Publisher, India
10. Sharma M.P.Sadana B.L.Kaur H.-Public Administration in Theory and Practices of Kitab Mahal, New Delhi.
11. Tyagi A R – Public Administration Principles & Practices Atma Ram & Sons. Delhi
12. Kaur Indrajit- Public Administration – SBPD Publishing House, Agra
13. Fadia B L and Fadia Kuladeep – Public Administration, Sahitya Bhavan Publication, Agra.
14. Laxmikanth M- Public Administration McGraw Hill Publisher, India.
15. Awasthi and Maheshwari – Public Administration, Laxmi Narayana Agrawal, Agra
16. Simh Hoshiyar, Sachdeva Pradeep – Public Administration Siddanth and Vyavahar Pearson – Delhi, Chandigarh
17. Sharma M.P .B.L. Sadhana Kaur. Harpreet Public Administration Siddhanth and Vyavahar Kithab Mahal - New Delhi

Web Sources:

1. www.yourarticlelibrary.com
2. www.britannica.com
3. www.who.int
4. www.weforum.org
5. http://egyankosh.ac.in
6. www.publicadministrationtheone.blogspot.com
7. www.managementstudyguide.com

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Total	40 Marks	Total	60 Marks
Any remarks/suggestions:			

PART A Introduction		
Class: B.C.A.	Year: I Year	Session: ..... Program: Certificate
	Course Code	**UPROGCA205**
	Course Title	Programming Methodology & Data Structures Lab
	Course Type (Core Course/Elective/Generic Elective/ Vocational	Major – Paper II
	Pre-Requisite. (if any)	To study this course, a student must have basic knowledge of Computers.
	Course Learning Outcomes(CLO)	**After the completion of** this course, a successful student **will** be **able to do the following:** 1. Develop simple algorithms and flow charts to solve a problem with programming using top down design principles. 2. Writing efficient and well-structured computer algorithms/programs. 3. Learn to formulate iterative solutions and array processing algorithms for problems, 4. Use recursive techniques, pointers and searching methods in programming. 5. Possess ability to choose a data structure to suitably model any daily used in computer applications. Implement and know the applications of algorithms for searching and sorting etc.
	Credit Value	Practical –2 Credit
	Total Marks	Max. Marks : 40+60 Min. Passing Marks: 16+24

PART B: Content of the Course			
		No. of Lab Practical in hours per week): 1 hour **per week**	
		Total No. of Lab.: **30 Hrs.**	
		Practical	**No. of Labs.**

	..	**Given the** problem statement, **students are required to formulate problem, develop** flowchart/algorithm, **write code in** C++, **execute and test it Students should be** given assignments **on following :** 1. Write a program to swap the contents of two variables. 2. Write a program for finding the roots of a Quadratic Equation, 3. Write a program tofind area of a circle, rectangle, square using switch ease. 4. Write a program to print table of any number.. 5, Write a program to print Fibonacci series. 6. Write a program to find factorial of a given number using recursion. 7. Write a program **to** convert decimal (integer) number into binary	30

equivalent binary number.

8. Write a program to check given string is palindrome or not
9. Write a program to print digits of entered number in reverse order.
10. Write a program to print sum of two matrices,
11, Write a program to print multiplication of two matrices.
12. Write a program to generate even/odd series from 1 to 100.
13. Write a program whether a given number is prime or not.
14. Write a program for call by value and call by reference.
15. Write a program to create a pyramid structure

    1
    12
    123
    1234
16. Write a program to check entered number is Armstrong or not.
17. Write a program to input N numbers and find their average.
18. Write a program to find the area and volume of a rectangular box using constructor.

1.9. Write a program to design a class time with hours, minutes and seconds as data members. Use a data function to perform the addition of two time objects in hours, minutes and seconds.

20. Write a program to implement single inheritance.
21. Write aprogram to find largest element from an array.
22. Write a program to implement push and pop operations on a stack using array.
23. Write a program to perform insert and delete operations on a queue using array.
24. Write a program for Linear search.
25. Write a program for Binary search.
26. Write a program for Bubble sort.
27. Write a program for Selection. sort.
28. Write a program for Quick sort,
29. Write a program for Insertion sort.
30. Write a program to implement linked list.

PART C: Learning Resources
Textbooks, Reference Books, Other Resources

Suggested Readings

- J. R. 1-lanly and E B. Koffman, "Problem Solving and Program Design in C", Pearson, 2015
- E. Balguruswamy, "C++ ", TMH Publication ISBN 0-07-462038-X
- Herbert Shildt, "C++ The Complete Reference "TMH Publication ISBN 0-07-463880-7

Reference Books:

- R. Lafore, 'Object Oriented Programming C++"
- N. Dale and C. Weems, 'Programming and problem solving with C++: brief edition", Jones & Bartlett

- Adam Drozdek, Data Structures and algorithm in C++", Third Edition, Cengage Learning.
- Sartaj Sahani, "Data Structures, Algorithms and Applications with C++", McGraw Hill.
- Robert L. Kruse, "Data Structures and Program Design in C++", Pearson.
- D.S. Mal Data Structure using C++", Second edition, Cengage Learning.
- M. A. Weiss, "Data structures and Algorithm Analysis in C", 2nd edition, Pearson,
- Lip schutz. ˙Schaum's outline series Data structures". Tata McGraw-Hill

Suggestive digital platform web link
https://www.youtube.com

No.	Online Course	Duration	Platform
I	Programming in C	8 weeks	NPTEL
2	Beginning C++ Programming - From Beginner to Beyond https:www.uderny.com	Self paced	Udemy

PART D: Assessment and Evaluation			
Internal Assessment : Continuous Comprehensive Evaluation (CCE) : 40 Marks		External Assessment: University Exam (UE) : 60 Marks Time **03.00 Hours**	
Internal Assessment	**Marks**	**External Assessment**	**Marks**
Hands-on Lab Practice	10 Marks	Practical record file	10 Marks
Viva	10 Marks	Viva voce practical	10 Marks
Lab Test from practical list	10 Marks	Table works/ Exercise Assigned (02) in practical exam	30 Marks
Assignments (Charts/ Model)/ Technology Dissemination/ Excursion/ Lab visit/ Industrial Training	10 Marks	Reports of excursion/ Lab visits/ Industrial training/ Survey/ Collection/ Models	10 Marks
Total *Excursion/ Lab visits/ Industrial Training is compulsory*	40 Marks	Total	60 Marks