

उत्तराखण्डसंस्कृतविश्वविद्यालयः हरिद्वारम्

पी.जी. डिप्लोमाइनकम्प्यूटर एप्लीकेशन
(P.G. Diploma in Computer Application) - 01Year

प्रथमप्रश्नपत्र(1st Semester) **Computer Fundamental**

समय : 03 घण्टे

अंक 100

- Unit 1: Brief History of Development of Computers ,Computer System Concept, Computer System Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Basic Components of a Computer System - Control Unit, ALU, Input/Output semiconductor Memory.Storage fundamentals - Primary Vs Secondary memory.
- Unit-2 Input Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR,OCR, OMR, , Light pen, Touch Screen. Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers - Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers
- Unit-3 Various Storage Devices - Magnetic Disks, Hard Disk Drives, Floppy, Disks, Optical Disks, Computer Software ,Need, Types of Software's - System software, Application software System Software - Operating System, compiler ,Assemblers, Interpreter .
- Unit -4 Operating Systems –Functions ,Types- Batch, Single, Multiprogramming, Multiprocessing Programming languagesMachine, Assembly, High Level, 4GL, Application Software - Word-processing, Spreadsheet, Presentation Graphics, Data Base Management Software, Number System, Number System of computers- Binary, Octal, Hexadecimal, their conversion. Coding System – ASCII, EBCDIC.
- Unit -5 Direction of Transmissions Flow-Simplex, Half Duplex Full Duplex, Types of Network - LAN, WAN, MAN etc. Topologies of LAN - Ring, Bus, Star, Mesh and Tree topologies. Computer Virus: Virus working principals, Types of viruses, Virus detection and Prevention Viruses on network.

Text & Reference Books :

1. Computers Today by S.K. Basandra, Galgotia Publications. Fundamentals of Information Technology by Alexis Leon & Mathews Leon, Vikas Publishing House, New Delhi. Dos Quick Reference By Rajeev Mathur, Galgotia Publications.
2. Rajaraman, Fundamentals of Computers, Fourth edition, Prentice Hall India Pvt. Limited, 2006.
3. Computer Fundamental, P.K Sinha, 4th Edition, BPB PUBLICATION 2007.
4. Fundamentals of Information Technology, ChetanSrivastva, Third edition, Kalayani Publishers, 2008.
5. Computers, Larry long & Nancy long, 12th edition, Prentice Hall, 2005.

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द्वितीयप्रश्नपत्र(1st Semester)

PC Packages (Windows, MS Word, MS Excel, MS Powerpoint)

समय : 03 घण्टे

अंक 100

- Unit 1: **MS Windows:** Introduction to MS Windows; Features of Windows; Various versions of Windows & its use; Working with Windows; My Computer & Recycle bin ; Desktop, Icons and Windows Explorer; Screen description & working styles of Windows; Dialog Boxes & Toolbars; Working with Files & Folders; simple operations like copy, delete, moving of files and folders from one drive to another, Shortcuts & Autostarts; Accessories and Windows Settings using Control Panel- setting common devices using control panel, modem, printers, audio, network, fonts, creating users, internet settings, Start button & Program lists; Installing and Uninstalling new Hardware & Software program on your computer.
- Unit-2 **Office Packages:** Office activates and their software requirements, Word-processing, Spreadsheet, Presentation graphics, Database, introduction and comparison of various office suites like MS-Office, Lotus-Office, Star-Office, Open-Office etc. MS Word Basics: Introduction to MS Office, Introduction to MS Word, Features & area of use. Working with MS Word, Menus & Commands, Toolbars & Buttons, Shortcut Menus, Wizards & Templates, Creating a New Document, Different Page Views and layouts, Applying various Text Enhancements, Working with -Styles, Text Attributes, Paragraph and Page Formatting, Text Editing using various features ; Bullets, Numbering, Auto formatting, Printing & various print options.
- Unit-3 **Advanced Features of MS-Word:** Spell Check, Thesaurus, Find & Replace; Headers & Footers, Inserting - Page Numbers, Pictures, Files, Autotexts, Symbols etc., Working with Columns, Tabs & Indents, Creation & Working with Tables including conversion to and from text, Margins & Space management in Document, Adding References and Graphics, Mail Merge, Envelops & Mailing Labels. Importing and exporting to and from various formats.
- Unit -4 **MS Excel:** Introduction and area of use, Working with MS Excel, concepts of Workbook & Worksheets, Using Wizards, Various Data Types, Using different features with Data, Cell and Texts, Inserting, Removing & Resizing of Columns & Rows, Working with Data & Ranges, Different Views of Worksheets, Column Freezing, Labels, Hiding, Splitting etc., Using different features with Data and Text; Use of Formulas, Calculations & Functions, Cell Formatting including Borders & Shading, Working with Different Chart Types; Printing of Workbook & Worksheets with various options.

Unit -5

MS PowerPoint: Introduction & area of use, Working with MS PowerPoint, Creating a New Presentation, Working with Presentation, Using Wizards; Slides & its different views, Inserting, Deleting and Copying of Slides; Working with Notes, Handouts, Columns & Lists, Adding Graphics, Sounds and Movies to a Slide; Working with PowerPoint Objects, Designing & Presentation of a Slide Show, Printing Presentations, Notes, Handouts with print options. Outlook Express: Features and uses, Configuration and using Outlook Express for accessing e-mails in office.

Text & Reference Books:

1. Windows XP Complete Reference. BPB Publications
2. Ms Office XP Complete BPB Publication
3. MS Windows XP Home Edition Complete, Bpb Publication.
4. Joe Habraken, Microsoft Office 2000, 8 In 1, By, Prentice Hall Of India
5. I.T .Tools And Applications, By A. Mansoor, Pragya Publications, Matura

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तृतीयप्रश्नपत्र(1st Semester)
Desktop Publishing (Page Maker, Photoshop)

समय : 03 घण्टे

अंक 100

- Unit 1: D.T.P For Publications Introductions to Printing, Types of Printing, Offset Printing, Working of offset Printing, Transparent Printout, Negative & Positives for Plate were making, Use of Desk Top Publishing in Publications, Importance of D.T.P in Publication, Advantage of D.T.P in Publication, Mixing of graphics & Image in a single page production, Laser printers - Use, Types, Advantage of lager printer in publication.
- Unit-2 Page Layout Different page format / Layouts, News paper page format, Page orientations, Columns & Gutters, Printing in reduced sizes. Introductions To Page Maker Page Maker Icon and help, Tool Box, Styles, Menus etc., Different screen Views, Importing text/Pictures, Auto Flow, Columns.
- Unit-3 Master Pages and Stories, Story Editor, Menu Commands and short-cut commands, Spell check, Find & Replace, Import Export etc., Fonts, Points Sizes, Spacing etc., Installing Printers, Scaling (Percentages), Printer setup Use of D.T.P. in Advertisements, Books & Magazines, News Paper, Table Editor.
- Unit -4 Introduction to Adobe Photoshop & Documents, Various Graphic Files and Extensions, Vector Image and Raster Images, Various Colour Modes and Models.
- Unit -5 Introduction to Screen and Work Area, Photoshop Tools &Palettes ,Use of Layers & Filters, Working with Images.

Text & Reference Books:

1. Page Maker 4.0 & 5.0 By B.P.O. Publications.
2. Prakhar Complete Course For DTP (Coreldraw, Pagemaker, Photoshop)

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चतुर्थप्रश्नपत्र(1st Semester)
PROGRAMMING IN C

समय : 03 घण्टे

अंक 100

- Unit 1: Fundamentals of C: I/O statements, Assignment Statements, Constants, Variables, Operators and Expressions, Standards and Formatted statements, Keywords, Data Types and Identifiers. Control Structures: Introduction, Decision making with if – statement, if-else and Nested if, while and do-while, for loop. Jump statements: break, continue, goto, switch Statement.
- Unit-2 Functions: Defining & Accessing : Passing arguments, Function Prototype, Recursion, Use of Library Functions, Storage Classes: Automatic, External and Static Variables (Register)
Arrays: Defining & Processing, Passing to a function, Multidimensional Arrays.
String: Operations of Strings (String handling through built-in & UDF: Length, Compare Concatenate, Reverse, Copy, Character Search using array)
- Unit-3 Structures: Defining & Processing, Passing to a function, Unions (Array within structure, Array of structure, Nesting of structure, Passing structure and its pointer to UDF, Introduction to Unions and its Utilities). MACROS.
- Unit -4 Pointers: Declarations, Passing to a function, Operations on Pointers, Pointers & Arrays, Array of Pointer, Pointer Arithmetic, Array accessing through pointers, Pointer to structure, Pointer to functions, Function returning pointers, Dynamic Memory Allocations.
Data Files: Open, Close, Create, Process Unformatted. Data Files. (Formatted Console I/O functions, Unformatted Console I/O functions, Modes Of Files, Use Of fopen(), fclose(), fgetc(), fputc(), fgets(), fprintf(), fscanf(), fread(), fwrite(), Command Line Arguments). Documentation, debugging, C Processors. Examples illustrating structured program development methodology and use of a block structured algorithmic language to solve specific problems.

Text & Reference Books:

1. Kernighan & Ritchie: The C Programming Language, PHI.
2. Gottfried, B.: Theory and problems of Programming in C, Schaum Series.
3. Balagurusamy, "Programming in C", 5th Edition, Tata McGraw-Hill Education, 2007
4. Yashavant Kanetkar, "Let us C", 10 th Edition, BPB publication, 2010

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पंचमप्रश्नपत्र(1st Semester)
Practical & Viva

अंक50

Practical in C.

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षष्ठमप्रश्नपत्र(1st Semester)
Practical & Viva

अंक 50

Practical in DTP Packages.

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सप्तमप्रश्नपत्र(2nd Semester)
Database Management System

समय : 03 घण्टे

अंक 100

- Unit 1: An Overview of DBMS and DB Systems Architecture : Introduction to Database Management systems, Data Models, Database System Architecture, Relational Database Management systems, Candidate Key and Primary Key in a Relation, Foreign Keys, Relational Operators, Set Operations on Relations, Attribute domains and their Implementation.
- Unit-2 The Normalization Process : Introduction, first Normal Form, Partial Dependencies, Second Normal Form, data Anomalies in 2NF Relations, Transitive Dependencies, Third Normal Form. The Entity Relationship Model: The Entity Relationship Model, Entities and Attributes, Relationships, One-One Relationships, Many-to-one Relationships, Normalizing the Model, Table instance charts.
- Unit-3 Interactive SQL : SQL commands , Data Definition Language Commands, Data Manipulation Language Commands, insertion of data into the tables, Viewing of data into the tables, Deletion operations, updating the contents of the table, modifying the structure of the table, renaming table, destroying tables, Data Constraints, Type of Data Constraint, Column Level Constraint, Table Level Constraint.
- Unit-4 Viewing The Data : Computations on Table Data, Arithmetic Operators, Logical Operators, Comparison Operators, Range Searching, Pattern Searching, SQL FUNCTIONS, Number Functions, Group Functions, Scalar Functions, Data Conversion Functions, Manipulating Dates in SQL , Character Functions, Sub queries and Joins : Joins, Equi Joins, Non Equi Joins, Self Joins, Outer Joins, Sub Queries, Correlated Queries, Using Set Operators:- Union , Intersect, Minus..

Text & Reference Books:

- 1.RamezElmasri, "Fundamentals of Database Systems", Edition 5 th , Pearson Education India, 2009
- 2.JD Ullman,Garcia-Molina, "Database System: The Complete Book", Edition 4 th , Pearson Education India,2009
- 3.S.K Singh, "Database Systems: Concepts, Design and Applications", Edition 2 nd, Pearson Education India 2008
- 4.C.J Date, "An Introduction to Database System", Edition 8 th , Pearson Education India. 2009
- 5.Ivan Bayross,"Database Concepts & Systems for Students", Edition 3 rd ,Shroff Publishers & Distributors Pvt Limited, 2009.

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अष्टमप्रश्नपत्र(2nd Semester)
Internet and Web Page Designing

समय : 03 घण्टे

अंक 100

- Unit 1: Applications of Internet, History of Internet, WWW, Various Services , World Wide Web (WWW) History, Working, Web Browsers, Its function Concept of Search Engines, client server architecture.
- Unit-2 Internet : Evolution, Protocols, Interface Concepts, Internet Vs Internet, Growth of Internet, ISP, Connectivity - Dial-up, Leased line, VSAT etc., URLs, Domain names, Portals, Applications. E-Mail :Concepts , Basics of Sending & Receiving, E-mail, Free E-mail services.
- Unit-3 Transfer Protocols, Telnet & Chatting , Client/Server Architecture Characteristic, FTP & its usages. Telnet Concept, Remote Logging, Protocols, Internet chatting - Voice chat, text chat.
- Unit -4 Searching the Web, HTTP, URLs, Web Servers, Web Protocols. Web Publishing Concepts, Domain Name Registration, . HTML, Design Tools, HTML Editors , Image Editors .
- Unit -5 HTML Concepts of Hypertext, Versions of HTML, Elements of HTML Syntax, Head & Body Sections, Building HTML Documents, Inserting Texts, Images, Hyperlinks, Backgrounds And Colour Controls, Different HTML Tags, Table Layout and Presentation, Use of Font Size & Attributes, List types and its Tags.

Text & Reference Books:

1. Level Module - M 1.2 - Internet & Web Page Designing By V.K.JainBpb Publications.
2. Internet For Everyone - Alexis Leon And Mathews Leon, Vikas Publications.
3. Internet For Dummies - PustakMahal, New Delhi
4. A Beginner's Guide To Html
[Http://Www.Ncsa.Nine.Edit/General/Internet/Www/Html.Prmter](http://Www.Ncsa.Nine.Edit/General/Internet/Www/Html.Prmter)
5. Internet for EveryOne: Alexis Leon, 1st Edition, Leon Techworld, Publication, 2009.
6. Greenlaw R; HeppE,"Fundamentals of Internet and WWW"2 nd Edition, Tata McGraw-Hill, 2007
7. Raj Kamal,"Internet& Web Technologies" edition Tata McGraw-Hill Education.2009
8. BayrossIvan"HTML, DHTML, Javascript, PERL, CGI" 3rd Edition,BPB Publication,2009
9. Chris Payne,"Asp in 21 Days" 2 nd Edition, Sams Publishing, 2003

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नवमप्रश्नपत्र(2nd Semester)
PROGRAMMING IN JAVA

समय : 03 घण्टे

अंक 100

- Unit 1: FUNDAMENTALS OF OBJECT-ORIENTED PROGRAMMING: - Introduction, Object-Oriented Paradigm, Basic Concepts of Object-Oriented Programming Benefits of OOP, Applications of OOP. How Java Differs from C and C++ (Java character set, Keywords, Identifiers, Literals, Operators, Separators), DECISION MAKING AND LOOPING :- Introduction, The while Statement, The do Statement, The for Statement (Additional features of for loop, Nesting of for loops), Jumps in Loops (Jumping out of a loop, Skipping a part of a loop), Labeled Loops. CLASSES.
- Unit-2 OBJECTS AND METHODS: - Introduction, Defining a Class, Adding Variables, Adding Variables, Adding Methods, Creating Objects, Accessing Class Members, Constructors, Inheritance: Extending a Class (Defining a subclass, Subclass constructor, Multilevel inheritance, Hierarchical inheritance), Overriding Methods, Final Variables and Methods, Final Classes, Finalizer Methods. ARRAYS, STRINGS AND VECTORS: - Arrays, One-Dimensional Arrays, Creating an Array (Declaration of arrays, Creation of arrays, Initialization of arrays, Array length), Two-Dimensional Arrays (Variable size arrays), Strings (String arrays, String methods, String Buffer class), Vectors, Wrapper Classes. INTERFACES: Introduction, Defining Interfaces, Extending Interfaces, Implementing Interfaces, Accessing Interface Variables.
- Unit-3 PACKAGES: Introduction, System Packages, Using System Packages, Naming Conventions, Creating Packages, Accessing a Package, Using a Package, Adding a Class to a Package, Hiding Classes. MANAGING ERRORS AND EXCEPTIONS :- Introduction, Types of Errors (Compile-time error, Run-time error), Exceptions, Syntax of Exception Handling Code, Multiple Catch Statements, Using finally Statement, Throwing Our Own Exceptions, Using Exceptions for Debugging.
- Unit -4 APPLETT PROGRAMMING :- Introduction, How Applets Differ from Applications, Preparing to Write Applets, Building Applet Code, Applet Life Cycle (Initialization state, Running State, Idle or stopped state, Dead state, Display state), Creating an Executable Applet, Designing a Web Page(Comment Section, Head Section, Body Section), Applet Tag, Adding Applet to HTML File, Running the Applet, More About Applet Tag, Passing Parameters to Applets, Aligning the Display, More about HTML Tags, Displaying Numerical Values, Getting Input from the User.

Text & Reference Books:

1. E Balagurusamy, "Programming with Java", 4 th Edition 2010.
2. Hebert Schildt, "Java the Complete Reference", 8th Edition 2011.
3. Bruce Eckel, "Thinking in Java", Kalyani Publishers", 4 th Edition 2011.

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दशमप्रश्नपत्र(2nd Semester)

Operating System

समय : 03 घण्टेअंक 100

- Unit -1 Characteristics, Structures - Simple Batch, Multi programmed, timeshared, Personal Computer, Parallel, Distributed Systems, Real-Time Systems, System components, Operating-System services, System Calls, Virtual Machines. Process and CPU Scheduling - Process concepts and scheduling, Operation on processes, Cooperating Processes, Threads, and Interposes Communication Scheduling Criteria, Scheduling Algorithm, Multiple -Processor Scheduling, Real-Time Scheduling.
- Unit-2 Memory Management and Virtual Memory - Logical versus Physical Address Space, Swapping, Contiguous Allocation, Paging, Segmentation, Segmentation with Paging, Demand Paging, Performance of Demanding Paging, Page Replacement, Page Replacement Algorithm, Allocation of Frames, Thrashing.
- Unit-3 File System Interface and Implementation -Access methods, Directory Structure, Protection, File System Structure, Allocation methods, Free-space Management, Directory Management, Directory Implementation, Efficiency and Performance. Process Management and Synchronization - The Critical Section Problem, Synchronization Hardware, Semaphores, and Classical Problems of Synchronization, Critical Regions, Monitors.
- Unit-4 Deadlocks - System Model, Dead locks Characterization, Methods for Handling Deadlocks Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, and Recovery from Deadlock. I/O Management – I/O software and its types, Disk Scheduling. Shell Programming: Concept of shell, Types of shell, Editors for shell programming (e.g. vi), basics of Shell programming. Case Study- UNIX, LINUX, and Windows NT.

Text & Reference Books:

1. Silberschatz & Galvin: Operating System Concept, Wiley, Latest Edition.
2. Milan Milenkovic: Operating Systems, Tata McGraw – Hill, Latest Edition.
3. William Stallings: Operating Systems, PHI, Latest Edition.
4. Yashawant Kanetkar: Unix Shell Programming, BPB.

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एकादशप्रश्नपत्र(2nd Semester)
Practical & Viva

अंक 50

Practical in Java.

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द्वादशप्रश्नपत्र(2nd Semester)
Project

अंक 150

Project.