

BCA Part - II

BCA201: Business Accounting

Question Paper pattern for Main University Examination Max Marks: 100

Part - I (very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.

Part-II (short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.

Part-III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice

UNIT-I

Basics of Bookkeeping and Accounting : Financial Accounting - Definition Scope and Objective of Financial Accounting. Limitations of Financial Accounting. Financial Accounting Principles.

UNIT-II

System of Bookkeeping : Accounting Process, Double Entry System, Books of Prime Entry, Subsidiary Books.

UNIT-III

Ledger Accounts - Preparation of Ledger Accounts, Bank Reconciliation Statements, Preparation of Trial Balance & Balance Sheet.

Depreciation Accounting - Meaning, need and importance of depreciation,

UNIT-IV

Final Accounts : Opening and Closing Entries, Trading, Profit and Loss accounts and Balance Sheet

UNIT-V

Final Accounts with Adjustments : Adjustments of Dividends, Drawings, Outstanding incomes and expenses, Depreciation.

Recommended Reference Books :

1. Shukla & Grewal : Advanced Accounts.
2. Sharma, Shah, Agrawal : Financial Accounting.
3. Rajesh Agrawal & R. Srinivasan.: Accounting Made Easy (Tata McGraw-Hill)

BCA Part - II

BCA202 : Discrete Mathematics

Question Paper pattern for Main University Examination

Mac Marks: 100

Part-I (very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.

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Part-III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

UNIT - I

Number Systems: Number systems- natural numbers, integers, rational numbers, real numbers, complex numbers, arithmetic modulo a positive integer. Radix r representation (decimal and binary), Change of radix(decimal to binary and vice versa). Binomial Theorem and Mathematical Induction:: Binomial theorem for positive integral indices, general and middle term in binomial expansion with simple applications. Some simple problems of Principle of Mathematical induction.

Recurrence Relations and Generating Functions : Recurrence relation, linear recurrence relation with constant coefficients, solution of linear recurrence relation with constant coefficients. Generating functions, Solution of recurrence relations using generating functions.

UNIT-II

Sets : Definition of sets, representation of sets, type of sets, Operations on sets, Sub sets, Power set, Universal set, Complement of a set, Union and Intersection of two sets, Venn diagrams, De-Morgans law of sets, Partition of sets

Relations: Relation, types of relations- reflexive, symmetric, anti-symmetric, transitive, equivalence and partial order relation. Relation and diagraphs, Cartesian product of two sets. Functions: Function, domain and range, One to one and onto functions, composite functions, inverse of a functions. Binary operations.

UNIT - III

Logie and Proufs : Proposition, Conjunction, Disjunction, Negation, Compound proposition, Conditional propositions (Hypothesis, conclusion, necessary and sufficient condition) and Logical equivalence, Do Morgan's law, Tautology and contradiction, quantifiers, universally quantified statements, component of a Mathematical systemi (axiom, definitions, undefined terms, theorem, lema and corollary), proofs (direct proofs, indirect proofs, proof by contra-positive), Mathematical Induction.

UNIT - IV

Graph: Basic terminology, directed and undirected graphs, path and connectivity, types of graphs Null, Regular, Complementary, Complete, Weighted and Bipartite. Subgraphs. Representation of graphs in computer memory matrix representation)- Adjacency matrix, Incidence matrix Fusion of graphs. Isomorphic and Homeomorphic graphs, paths and cycles, Eulerian and Hamiltonian graphs, shortest path algorithm.


UNIT - V

Tree : Definition of tree, Fundamental terminologies-Node, Child, Parent, Root, Leaf Level Height and Subling. Rooted trees, Ordered trees, Binary tree, Complete binary tree, Tree of an algebraic expression, Tree searching (traversal algorithms). Preorder, Inorder and Postorder Distance and centre, Relation between general tree and binary tree, Spanning trees, Algorithms for minimal spanning trees (Kruskal's and Prim's).

Recommended reference books :

1. C.I.Liu: elements of Discrete Mathematics Cata McGraw Hill publishing Company Ltd. 2000
2. Richard johnsonbaugh disvrete mathematics prearson Asia 2001
3. John Truss: Discrete Mathematics for Computer Scientists, Pearson Education, Asia, 2001.
4. Robert J. McEliece: Introduction to Discrete Mathematics, Tata Mc. Graw Hill, India.
5. Lipschutz: Discrete Mathematics, Tata Mc. Graw Hill India.
6. Kenneth H. Rosen, Discrete mathematics and Applications, Tata Mc. Graw Hill, India.

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BCA203 : Operating System

Question Paper pattern for Main University Examination

Max Marks: 100

Part - I (very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.

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Part-III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

UNIT-I

Necessity of Operating system. Operating system terminology, Evolution of Operating Systems (multiprogramming systems, batch systems, timesharing system, Process control and Real-time system). Factors in OS Design (performance protection and security, correctness, maintainability application integration, portability, and interoperability).

UNIT - II

Process Management: Process definition, Process control, initializing Operating System, Process Address Spaces Process Abstraction; resource Abstraction and Process Hierarchy. Scheduling Mechanisms, Partitioning a process into small processes Non-preemptive strategies (first come first served, shortest job next, priority scheduling deadline scheduling), Preemptive strategies (Round Robin). Basic Synchronization principles : Interactive processes coordinating processes. Semaphores. Shared memory multiprocessors, AND Synchronization, Inter process communication, inter process messages, Deadlocks. Resource Status Modeling Handling deadlocks.

UNIT - III

Memory Management: Requirements on the primary memory, mapping the address space to primary memory, dynamic memory for data structures, Memory allocation (Fixed partition Memory allocation strategy), Dynamic Address Relocation, Memory Manager Strategies (Swapping. Virtual Memory. Shared Memory Multiprocessors). Virtual Memory: Address translation paging, Static and dynamic paging algorithms.

UNIT - IV

Structured files, Memory mapped files. Directories, directory implementation, file sharing information across network remote-Viruses and Worms. Security Design principles.

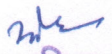
UNIT-V

Protection and Security goals, Domain of Protections, Security Problems, Authentication, System threats, Encryptions, Introduction of different Operating systems (Linux, Unix, Windows Server).

Recommended reference books:

1. Galvin P.B, Silberschatz; Operating System Principles; (Seventh Edition), J Wiley 2008
2. Tanenbaum A.S, Modern Operating Systems, 2nd Edn. PHI Publ.2003
3. William Stalling: Operating Systems, Internal & Design Principles, Sixth Edn; Pearson, 2009.
4. Gary Nutt: Operating Systems-A Modern Perspective (Second Edition), Pearson Education 2008.
5. D.M. Dhandlere: Systems Programming and Operating Systems (Second Edition), Tata McGraw Hill Publishing company Limited.
6. Harvey M. Deitel, Operating Systems, Pearson Education.

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BCA204: Data base Management System

Question Paper pattern for Main University Examination

Max Marks: 100

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Part - III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

UNIT-I

Database System Concepts & Architecture: Overview of DBMS, Basic DBMS terminology, data base system vis file system, Advantages and disadvantages of DBMS, Codd rules, Data independence. Architecture of a DBMS, Schemas, Instances, Database Languages.

UNIT-II

Data Modeling: Data modeling using the Entity Relationship Model: ER model concepts notation for ER diagram, mapping constraints, keys, Concepts of Super Key, candidate key. primary key.

Relational Algebra: Fundamental operations of relational algebra & their implementation, interdependence of operations.

UNIT-III

Database Design: Functional dependencies, loss less decomposition, 1st, 2nd & 3 normal forms dependency preservation, boyce codd NF. Introduction to Transactions, transaction states.

UNIT-IV

Introduction to SQL: Characteristics of SQL, Advantages of SQL, SQL data types and literals, Types of SQL commands, SQL operators and their procedure, Tables, views and indexes, Queries and sub queries, Aggregate functions, insert, update and delete operations. Joins, Unions, Intersection, Minus in SQL.

UNIT-V

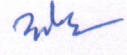
Introduction to Advance DBMS : Object Oriented Languages, Persistent Programming Languages. Object-Relational Databases: Nested Relations, Storage for Object Databases.

Distributed Databases : Distributed Data Storage, Distributed Transactions, Commit protocol.

Reference Books:

1. Korth H F and Silberschataz A, System Concepts, Sixth Edition; McGraw Hill,2006
2. Leon, and Leon, SQL Tata McGraw Hill Pub. Co. Ltd.
3. Ivan Bayross; SQL/PL 4th Edn: BPB,2009
4. Navathe S.B. Elmasri R; Fundamentals of Database Systems, Fifth Edition, Pearson 2009.
5. Ramakrishan and Gharke, Database Management Systems, 3rd Edition, Tata Mc Graw Hill, 2007 .
6. Data C.J. Database Management Systems, Pearson Education Asia.
7. Singh S.K.; Database Systems; I Edition; Pearson, 2006.

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BCA205 : Web Designing and Multimedia

Question Paper pattern for Main University Examination

Mar Marks: 100

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UNIT-I

World Wide Web: Elements of the Web, Web browser and its types, viewing pages with a browser, using a browser for Mail, News and chat, Security and Privacy issues (cookies, firewalls, executable Applets and Scripts, blocking system). Plug-Ins and Active controls, dealing with Web pages that contain Active X, playing streaming Audio and Video, playing MP music. Using Search engines, subscriptions and channels, making use of web resources (Portal, News and weather, sports Persona)

UNIT-II

HTML Fundamentals: Introduction to HTML, Creating HTML Pages, incorporating Horizontal Rules and Graphical Elements, Hyper-links, Creating HTML Tables, Creating FITML Forins, HTML and Image Techniques. HTML and Page, Frames, publishing and publicizing site structuring web site.

UNIT-III

Introduction to DHTML: features of DHTML, CSS: Types of Style sheets, Different elements of Style sheets, Filter effects, IFrame, DIV and Layer Tags.

UNIT-IV

Java Script Fundamental: Introduction to Java Script Working with Variables and Data Functions, Methods and Events, Controlling Programming Flow. The Java Script Object Model Java Script language Objects, Developing Interactive Forms.

UNIT-V


Introduction of Photoshop

Creating a New File: Main Selections, Picking color, Filling a selection with color, More ways to choose colors and fill selections, Painting with paintbrush tool, Using the magic wand tool and applying a filter, Saving your document (save your file;- Save file as a JPEG, TIFF, GIF, PNG), Introduction and use of layers, Introduction and use of tool of PhotoShop.

References:

1. Mastering HTML 5.0 by Deborah S. Ray and Eric A. Meyer. Ray From BPB.
2. Mastering Java Script, BPB publication.
3. Black book Photoshop.
4. Blackbook CoralDraw.
5. M.L. Young: Complete Reference b: Internet:2nd Edition; Tata McGraw Hill, 2006.
6. Thomas A; Powell. Web Design: C.R.: Second Edition TMH 2009.
7. Thomas A. Powell HTML & XHTML : C.R. Fourth Edition, TMH, 2008.
8. G. Roverston; Hands on HTML., BPB Publication.
9. Joel Sklar: Principles of Web Design BPB Publication.

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BCA206 (A) . Object Oriented Concepts (Through 'C++')

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UNIT-I

Introduction to Object Oriented Concepts: Evolution of OOP, OOP Paradigm advantages of OOP, comparison between functional programming and OOP approach. characteristics of object oriented language - objects, classes, inheritance, reusability, user defined data types, polymorphism, overloading.

UNIT -II

Introduction to C++: C++ tokens, data types, CH operators, type conversion, variable declaration, arrays.

UNIT - III

Classes and Objects: Classes, objects, defining member functions, arrays of class objects, pointers and classes, passing objects, constructors, types of constructors, destructors, this pointer, access specifiers, friend functions, inline functions.

UNIT - IV

Inheritance: Introduction, Importance of Inheritance, types of inheritance, Constructor and Destructor in derived classes.

Polymorphism: Function overloading, operator overloading, virtual functions, pure virtual functions

UNIT-V

Operations on Files. Templates, Exception Handling.

Reference Books :

1. Herbert Schildt; CH: The Complete Reference 4th Edn; TMH, 2003.
2. Robert Lafore; Object Oriented Programming in C++, 4th Edition; Techmedia.
3. Balagurusamy : Object Oriented Programming in C++, 4th Edition TMH,2009.
4. Venugopal, Rajkumar; Mastering C++, Tata Mcgrow Hill, 2006.
5. Kanetkar Y.: LET US C++; BPB, 2009.
6. Deitel and deitel; How to program C++, Addison Wesley, Pearson Education Aisa
7. John R. Hubbard, Programming with C++, McGraw Hill International.

BCA206 (B): Programming through VB 6.0

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Part-III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

UNIT-I

Introduction : Introduction Graphical User Interface (GUI), Programming Language (Procedural, Object Oriented, Event Driven), The Visual Basic Environment, Editions of Visual Basic, Features of VB, How to use VB compiler, debug and run the programs, Introduction to tool box, object naming conventions, setting properties, Methods and Events. Working with basic objects - forms, labels, textboxes, command buttons, option button, check box, Frame and Image.

UNIT -II

Programming Fundamentals : Data types in VB, Variables and Declaration, Scope of variables. Operators in VB, sub procedures and functions, Control structures - IF, Select ..case, Do while ... loop, Do ... loop while, Do ... loop until, For ..Next, Exit For, Do, With .. End With. Fixed size and Dynamic Arrays, control array, Data type conversion functions, VB Built in functions - Date, time, Format and String.

UNIT - III

Additional Controls and Menus : List box and combo box controls, Scroll bars, Picture box control, Shape and line controls, Timer control, Menu basics, Menu Editor, Creating menus, Assigning access keys and short cuts, Separating menu items, creating popup menus, controlling menus at run time.

UNIT-IV

Dialog Boxes, Mouse Events, MDI Forms and Error Handling : Standard, Custom and Common Dialog Control and Mouse Events, Creating and using MDI Form, Arranging the child forms, Adjusting the size of controls, Runtime errors, Handling runtime errors by on error .. Statements, Ent object, Debug and immediate window.

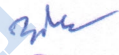
UNIT-V

Database Connectivity : Connecting with databases through ADODC control, Bounded and unbounded methods for displaying data, Accessing and Navigating database, Recordsets - Tabletype, Dynaset, snapshot, dynamic and forward only, connecting database using connection string.

Reference Books :

1. Petroustos Evangelos: Mastering Visual Basic 6.0; BRB Publications, 2002.
2. Norton's Peter: Guide to Visual Basic 6.0; Techmedia.
3. Kurata Deborah: Doing Objects in Visual Basi; Techmedia.
4. Mastering database Programming with Visual Basic 6 by Petroustos.

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