

# The Bhopal School of Social Sciences, Bhopal

## Yearly Syllabus for Undergraduates As recommended by Board of Studies of Computer Science and Applications Session 2017-18 onwards

**Class: BCA I Year (for Regular Students only)**

Paper Code	Paper Title	Internal			Theory	Grand Total
		Three Months	Six Months	Total		
BCA-101	Fundamentals of Computers	5	5	10	40	50
BCA-102	English Language Communication	5	5	10	40	50
BCA-103	Office Automation Packages and Tools	5	5	10	40	50
BCA-104	Problem Solving and Programming through C	5	5	10	40	50
BCA-105	Business Mathematics	5	5	10	40	50
BCA-106	Digital Computer Organisation	5	5	10	40	50
BCA-107	Accounting & Financial Management	5	5	10	40	50
BCAP-108	Lab-I					50
BCAP-109	Lab-II					50
					Grand Total	450

Note:- Foundation Course as recommended by the Central Board of Studies.

# The Bhopal School of Social Sciences, Bhopal (M.P)



(An Autonomous College Reaccredited with 'A' Grade by NAAC  
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<b>Department</b>	<b>COMPUTER APPLICATIONS</b>
<b>Course</b>	<b>BCA</b>
<b>Year/Semester</b>	<b>I year</b>
<b>Title of the Paper</b>	<b>FUNDAMENTALS OF COMPUTERS</b>
<b>Paper</b>	<b>BCA-101</b>
<b>Maximum Marks (Theory)</b>	<b>40</b>
<b>Maximum Marks (Internal)</b>	<b>10</b>
<b>With effect from</b>	<b>2019-20</b>

## Course Objectives:

1. To learn various types of computers its characteristics, usage, limitations and benefits
2. To study computer peripherals and memory
3. To learn problem solving techniques
4. To acquire knowledge about operating system
5. To study Network and its type

## Course Outcomes:

1. Describe computer with its characteristics, its usage, limitations and benefits
2. Use computer peripherals and memory efficiently
3. Develop programming concepts
4. Compare between various operating systems and their functions
5. Identify network fundamentals and various communication networks

# The Bhopal School of Social Sciences, Bhopal

BCA I year

Paper I

Paper Title: FUNDAMENTALS OF COMPUTERS

Session: 2017-18

Max Marks: 40 (Theory)

CCE Marks: 10

## UNIT I

Computer System: Definition, Characteristics, capabilities and limitations, Types of Computers: Analog, Digital, Micro, Mini, Mainframe & Super Computers, Generations of Computers, Server.

Smart Systems: definition, characteristics and applications. Definition of Embedded system, GIS, GPS, Cloud Computing, Concept of hardware, software and firmware. Use of computers in e-governance and various public domains and services.

## UNIT II

Computer organization: block diagram of computer and its functional units.

Input devices – keyboard, scanner, mouse, light pen, bar code reader, OMR, OCR, MICR, track ball, joystick, touch screen camera, microphone, etc.,

Output devices: monitors – classification of monitors based on technology – CRT & flat panel, LCD, LED monitors, speakers, printers – dot matrix printer, ink jet printer, laser printer, 3D Printers, Wi-Fi enabled printers, plotters and their types, LCD/LED projectors.

Computer memory and its types, **Memory Hierarchy, Types of RAM and ROM**, Storage devices: Magnetic tapes, Floppy Disks, Hard Disks, Compact Disc – CD-ROM, CD-RW, VCD, DVD, DVD-RW, USB drives, Blue Ray Disc, SD/MMC Memory cards.

## UNIT III

Programming Concept and its planning: Purpose of writing a program, Steps in Program Development, Characteristics of a Good Program, development of an Algorithm, Flow Charts through examples, **Iteration, Recursion, Looping**.

PROGRAMMING LANGUAGES: History, Classifications, Low Level, Assembly, High Level languages and 4GL, Advantages & Disadvantages of Programming Languages.

TYPES OF SOFTWARE: System Software, Translators, Compilers, Interpreters, Assemblers, Operating System, Linkers, Libraries & Utilities, Application Software, Packaged & Tailored Softwares. Examples of word-processing, spreadsheets, presentation, multimedia, graphics, accounting, statistical analysis, MIS software and other utility software available.

# The Bhopal School of Social Sciences, Bhopal

BCA I year

Paper I

Paper Title: FUNDAMENTALS OF COMPUTERS

Session: 2017-18

## UNIT IV

OPERATING SYSTEMS: Introduction, **Functions of OS**, Types of O.S.: Single User, Multi User, Multi Programming, Multi-Tasking, Real Time, Time Sharing, Batch Processing, Parallel Processing, Distributed Processing, **Mobile Devices Operating System**. File Allocation Table (FAT & FAT 32), NTFS, Drives, files & directory structure and its naming rules, booting process details of DOS and Windows, system files.

Examples of Operating systems prevalent around the world, Windows, Linux, iOS, Android and others. The concept of Open source, **Open Source Software**, its advantages and limitations.

Virus **and malwares**- working principles, Types of viruses, **Worms and Trojan Horses**, virus detection and prevention, viruses on network, Antivirus software, **Some examples related to virus attacks**.

## UNIT V

WWW, Browser, Search Engine, Uses of the Internet, Basic Services of Internet, Difference between website and portal.

Use of computers in communication: Communication Process, Communication types – Simplex, Half Duplex, Full Duplex, Communication Protocols, Communication Channels – Twisted, Coaxial, Fiber Optic, Serial and Parallel Communication, Modulation and Demodulation, Modem – Working and characteristics, Types of network Connections – Dialup, Leased Lines, ISDN, DSL, RF, Broadband, Types of Network – LAN, WAN, MAN, Internet, VPN etc., Topologies of LAN – Ring, Bus, Star, Mesh and Tree topologies, Components of LAN – Media, NIC, NOS, Bridges, Adaptors, HUB, Routers, Routers, Repeater and Gateways.

### Text books & Reference books:

1. Computer Today By S.K. Basandra
2. Computer Fundamentals By P.K. Sinha
3. Operating System By Peterson
4. Easy Approach To Computer Course By G.K. Iyer
5. Operating System By S. Galvin
6. Fundamentals of Information technology, Alexis Leon & Mathews Leon, Vikas Publishing House, New Delhi.

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<b>Department</b>	<b>COMPUTER APPLICATIONS</b>
<b>Course</b>	<b>BCA</b>
<b>Year/Semester</b>	<b>I year</b>
<b>Title of the Paper</b>	<b>English Language Communication</b>
<b>Paper</b>	<b>BCA-102</b>
<b>Maximum Marks (Theory)</b>	<b>40</b>
<b>Maximum Marks (Internal)</b>	<b>10</b>
<b>With effect from</b>	<b>2019-20</b>

## Course Objectives:

1. To learn effective communication in English Language
2. To gain the knowledge of English expressions
3. To learn to draft business communication documents
4. To develop presentation skills
5. To gain the knowledge of interview skills and group discussions

## Course Outcomes:

1. Use basic English grammar correctly
2. Use relevant vocabulary appropriately
3. Write business communication documents
4. Demonstrate effective presentations skills
5. Show improved interview skills and confidence in group discussions

# **The Bhopal School of Social Sciences, Bhopal**

**B.C.A. I Year**

**Paper II**

**Paper Title: ENGLISH LANGUAGE AND COMMUNICATION**

**Session:2017-18**

**Max. Marks: 40**

**CCE Marks: 10**

## **UNIT I**

### **Grammar:**

Parts of Speech, Determiners, Tenses, Sentences: Simple, Compound and Complex, Voice – Active and Passive, Narration. Common Errors.

## **UNIT II**

### **Lexis:**

Use of Dictionary and Thesaurus, Vocabulary. Word formation, Synonyms, Antonyms, words with similar and dissimilar meanings, Homophony, Prefixes and Suffixes. Phrases: Noun phrase, Verb phrase, Adjective phrase, Adverb phrase and Prepositional phrase.

## **UNIT III**

### **Communication and Language Skills:**

Importance of communication. Elements of communication, Skills of communication – listening, reading, writing and speaking. Verbal and Non-Verbal Communication, Comprehension, Paragraph writing-its methods and types, Precis Writing, Summary Writing, Note-Making and Note-Taking. Writing minutes & Memos.

Importance of feedback and reporting in business/corporate environment. Business Etiquettes and Mannerisms.

## **UNIT IV**

### **Oral Business Communication:**

The Oral Channel And Its Use In Business Transactions, Principles of effective communication. Preparing For A Speech – Informal and Formal speech, Writing A Speech On

A Given Topic Or For An Occasion, Writing the Chairman's speech. Preparing for Interviews, Group Discussion and Conferences.

Reports And Proposals: Classification. Importance of reports, Preparing To Write A Report, Features of Effective Report, Types Of Business Reports. Reports of Committees, Sample Reports. Preparing a Proposal. Business Correspondences - Offer, Enquiry, Quotation, Order, Execution, Claim, Complaint and Adjustments.

# **The Bhopal School of Social Sciences, Bhopal**

## **B.C.A. I Year**

### **Paper II**

**Paper Title: ENGLISH LANGUAGE AND COMMUNICATION**

**Session:2017-18**

#### **UNIT V**

##### **Written Business Communication:**

Importance. Concept. Advantages and Disadvantages of written business communication. Need of Business letters. Layout/Structure of A Business Letter. Kinds of business letters. Essentials of an effective business letter, Enquiries. Replies, Orders, Credit and Reference letters. Supply letters. Dunning letters, Sales letters, Circular letters.

Drafting Official letters - rules to be observed for drafting of official letters, writing application for jobs. Preparing CV for job.

Modern Forms of Communication-fax, E-Mail, Video Conferencing, International Communication, Adapting to Global business.

##### **Text Books & Reference Books:**

1. Wren and Martin high school grammar, S. Chand Publications
2. Essential Grammar in Use - Raymond Murphy
3. Practical English Usage - Micheal Swan
4. Business Communication- Rai&Rai , Himalaya Publications.
5. Speaking And Writing For Effective Business Communication, Fruncis Sunderaraj , Macmillan India Ltd.
6. Business Communication Essentials- Courtlancl L Bovee
7. FOUNDATIONS OF BUSINESS COMMUNICATION: An Integrative Approach- Dona Young
8. Business Communication - SangeeraMagan
9. Professional communication skills- A K Jain, PravinSr Bhatia , A M Sheikh, S. Chand Publications

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<b>Department</b>	<b>COMPUTER APPLICATIONS</b>
<b>Course</b>	<b>BCA</b>
<b>Year/Semester</b>	<b>I year</b>
<b>Title of the Paper</b>	<b>OFFICE AUTOMATION PACKAGES AND TOOLS</b>
<b>Paper</b>	<b>BCA-103</b>
<b>Maximum Marks (Theory)</b>	<b>40</b>
<b>Maximum Marks (Internal)</b>	<b>10</b>
<b>With effect from</b>	<b>2019-20</b>

## Course Objectives:

1. To learn to work on MS-Window
2. To learn efficient ways to prepare documents in MS Word
3. To learn efficient ways to handle data in MS Excel
4. To gain knowledge to improve quality of presentation and communication
5. To learn Database management in MS Access

## Course Outcomes:

1. Apply better file management control
2. Use MS Word for better documentation
3. Formulate data operations using MS Excel
4. Demonstrate better presentation skills and communicate their ideas efficiently
5. Perform database operations using MS Access



**The Bhopal School of Social Sciences, Bhopal**  
**BCA I year**  
**Paper III**  
**Paper Title: OFFICE AUTOMATION PACKAGES AND TOOLS**  
**Session: 2017-18**

**Max Marks: 40 (Theory)**

**CCE Marks: 10**

**UNIT I**

**MS Windows:** Introduction to MS-Windows; Features of Windows; Various versions of Windows & its use; Working with Windows; My Computer, Accessories & Recycle bin; Desktop, Icons and Windows Explorer; Screen description & working styles of Windows; Dialog Boxes & Toolbars; Volume Control, Working with Files & Folders; simple operations like copy, delete, moving of files and folders from one drive to another, Shortcuts & Auto start, Accessories, Windows Settings using Control Panel – setting up 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, maintaining user accounts, setting up system date and time.

Office Packages – Office activities and their software requirements, Word processing, Spreadsheet, Presentation graphics, Database, introduction and comparison of various office suites like MSOffice, Lotus Notes, Star Office, Open Office, etc.

**UNIT II**

**MS Word (version 2007 and above):** Introduction, Features & area of use. Working with MS Word: Ribbon tabs – Home, Insert, Page Layout, References, Mailings, Review, View. 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 correct, change case, sorting, Printing & various print options.

Advanced Features of MS-Word: Spell Check, Thesaurus, Find & Replace; Headers & Footers; Inserting – Page Numbers, Pictures, Files, Auto text, Symbols, formula, 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, printing Envelops & Mailing Labels. Importing and exporting to and from various formats. Working with OPTIONS in MS-WORD.

**UNIT III**

**MS Excel (version 2007 and above):** Introduction, features 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

# The Bhopal School of Social Sciences, Bhopal

BCA I year

Paper III

Paper Title: OFFICE AUTOMATION PACKAGES AND TOOLS

Session: 2017-18

Different Chart Types; Printing of Workbook & Worksheets with various options. **Text Formatting: Aligning, Rotating, merge, shrink to fit and word wrap.**

## UNIT IV

**MS PowerPoint(version 2007 and above):** 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; Design slides using themes, colors, and special effects. Adding special effects to slide transitions. 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, Working with master slides.

**Steps to a Quality presentation, Formatting and designing a presentation: changing the colour scheme Adding slide footers, customizing the background; Formatting and changing Text: Aligning text, replacing fonts, adjusting line spacing, adjusting tabs and indents.**

## UNIT V

**MS Access (version 2007 and above):** Introduction to database, Relational Database, Database Elements, Tables, Query, Opening and Closing Access Interface Window, Different tabs and icons on ribbon, creating a New database in Access, save and open database, Table creation, Database view and Design View. Data Types, Field Properties, Fields: names, types, properties, Data Entry, Add record, delete record, edit text, Sort, find/replace, filter/select, rearrange Columns.

### Textbooks and Reference Books :

1. Learn Microsoft Office – Russell A. Shultz – BPB Publication.
2. Microsoft Office – Complete Reference – BPB Publication.

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<b>Course</b>	<b>BCA</b>
<b>Year/Semester</b>	<b>I year</b>
<b>Title of the Paper</b>	<b>PROBLEM SOLVING AND PROGRAMMING THROUGH C</b>
<b>Paper</b>	<b>BCA-104</b>
<b>Maximum Marks (Theory)</b>	<b>40</b>
<b>Maximum Marks (Internal)</b>	<b>10</b>
<b>With effect from</b>	<b>2019-20</b>

## Course Objectives:

1. To study the programming techniques
2. To learn to write debug and execute C program
3. To learn programming in C using decision control and array
4. To learn function and storage classes in C
5. To study pointers and file management in C programming

## Course Outcomes:

1. Develop logics and programming concepts
2. Design, implement, run and debug programs in C
3. Learn the use of decision control and array to solve complex problems in C
4. Use function and storage classes
5. Implement pointers and file management in C

# The Bhopal School of Social Sciences, Bhopal

BCA I year

Paper IV

Paper Title: PROBLEM SOLVING AND PROGRAMMING THROUGH C

Session: 2017-18

Max Marks: 40 (Theory)

CCE Marks: 10

## UNIT I

Use of Algorithm for problem solving. Flow Charts – Symbols, Rules for making flow chart. Program Concept and logic development, Algorithm and flowcharts as programming aids, Characteristics of Programs, Various stages in Program Development , Programming Techniques – Top down, Bottom up, Modular, Structured – Features, Merits, Demerits, and their comparative study.

Programming Logic- Simple, Branching, Looping, Recursion, Cohesion & Coupling, Program Testing & Debugging & their Tools .

## UNIT II

Introduction to C language, standard features of C, Structure of a C program. Introduction to C compilers, Creating and compiling C Programs, IDE features of Turbo C compiler, **GCC Compiler**, Command line options to compile C program in TC.

Keywords, Identifiers, Variables, constants, **Escape sequence '\n','\t','\b'**, Scope and life of variables - local and global variable. Data types, Expressions, Operators: Arithmetic, Logical, Relational, Conditional and Bit wise Operators, **Increment and Decrement operators**. Precedence and Associativity of Operators, Type conversion. Basic input/output library functions: Single character input/output i.e. getch(), getchar(),putch(), putchar(). Formatted input/output – scanf() and printf(). Library functions: **clrscr(), exit()**, Mathematical Functions: **ceil(x), floor(x), pow(x,y), sqrt(x)** & Character functions: **tolower(), toupper(), islower(), isupper(), isalpha(), isdigit(), String functions : strcat(), strlen() , strcmp(), strlwr(),strupr(), strrev()**.

## UNIT III

Declaration statement, conditional statement : If statement, If.....Else statement, Nesting of If...Else Statement, else if ladder, The ?: operator, Switch statement. Iteration statements: for loop, while loop, do-while loop. Jump statements: break, continue, goto, exit().

ARRAYS: concept of Single and Multi Dimensional arrays, Array declaration and initialization of arrays. Strings: declaration, initialization, string functions.

# The Bhopal School of Social Sciences, Bhopal

BCA I year

Paper IV

Paper Title: PROBLEM SOLVING AND PROGRAMMING THROUGH C

Session: 2017-18

## UNIT IV

The need for C functions, User defined and library functions, Multifunction program, prototype of functions, Elements of user defined functions (Function declaration, Function call, Function definition), prototype of main() function, Calling of functions, Category of functions, Function arguments, argument passing: call by value and call by reference, Return values. Nesting of functions, Recursion, Array as function argument, Command line arguments, Storage class specifiers - auto, extern, static, register.

## UNIT V

Defining structure, Arrays vs Structures, Declaration of structure variable, typedef, Accessing structure members, Structure initialization and rules for it, Nested structures, Array of structure, Structure assignment, Structure as function argument, Functions that return structure, uses of structure, Union. Difference between structure and union.

Pointers – Fundamentals, Pointer declarations, Initialization of pointer variables and rules for it, Accessing a variable through its pointer, Passing pointers to the functions, pointers and one dimensional array, dynamic memory allocation, Operations on pointers, arrays of pointers.

Concept of debugging. Finding Errors in the programs, error codes and their meanings, Various debugging options in Turbo C compiler. (Debug and Options Menu of the TCC IDE, Code Block, Visual Studio)

File Handling - Defining, opening & closing a file, Functions for processing and creation of files- Reading, Writing, Accessing(tell()) & Seeking(seek()). Access modes-read, write and append.

### Textbooks & Reference Books:

1. “Programming In C”, by E. Balaguruswamy ,TMH Publications %o
2. Schaums Outline Series, by Gottfried
3. The C programming Language by Brain W Kernigham and Dennis M Ritchie
4. Y. Kanetkar, “Let us C” by Y Kanetkar, BPB Publications %o
5. “C The Complete Reference”, H. Schildt, Tata McGraw Hill
6. Problem solving and program design with ‘C’ by Elliot Koffman
7. Problem solving and programming by Kenneth A Barclay

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<b>Department</b>	<b>COMPUTER APPLICATIONS</b>
<b>Course</b>	<b>BCA</b>
<b>Year/Semester</b>	<b>I year</b>
<b>Title of the Paper</b>	<b>BUSINESS MATHEMATICS</b>
<b>Paper</b>	<b>BCA-105</b>
<b>Maximum Marks (Theory)</b>	<b>40</b>
<b>Maximum Marks (Internal)</b>	<b>10</b>
<b>With effect from</b>	<b>2019-20</b>

## Course Objectives:

1. To solve basic problems in trigonometry
2. To solve business math problems using simultaneous equations
3. To learn statistical techniques
4. To calculate commission, brokerage, discounts and solve ratio proportion problems
5. To study fundamentals of differentiation and integration

## Course Outcomes:

1. Implement trigonometric solutions for measurements in real world scenarios
2. Implement matrices and simultaneous equations to solve complex problems
3. Use statistical tools efficiently
4. Analyze real world scenarios and formulate problems about commission, brokerage and discounts
5. Apply differentiation and integration for solving complex problems

# The Bhopal School of Social Sciences, Bhopal

BCA I year

Paper V

Paper Title: BUSINESS MATHEMATICS

Session: 2017-18

Max Marks: 40 (Theory)

CCE Marks: 10

## UNIT I

Trigonometry: Angles & their Measurement, Values of Trigonometric Ratios and their Graphical Representations, Height and Distances.

## UNIT II

Theory of Indices, Definition **& Types** of Matrices, Elementary Transformation of Matrices, Determinant and Matrices, Special Matrices, Inverse of a Matrix. **Simultaneous Equations, Elimination Method, Substitution Method, Cross Multiplication Method, Simultaneous Equations in Three variables and their methods**

## UNIT III

**Logarithm and Antilogarithm**, Frequency Distribution, Histogram, Measure of Central Tendency, Mean, Mode, Median, Standard Deviation. **Methods of Correlation, Karl Pearson's Coefficient, Concurrent Deviation**

## UNIT IV

Ratio and Proportion, **Sacrificing Ratio and Gaining Ratio**, Percentage, Commission & Brokerage, Discount, Profit & Loss.

## UNIT V

Limits & Continuity, Limits of Functions, Infinite Limits, Limits at Infinity, Continuous Function, Differentiation of 1<sup>st</sup> and 2<sup>nd</sup> Order, Integration – finite, infinite, addition, subtraction & multiplication.

### Text Books and Reference Books:

1. Business Mathematics BY S.M.SHUKLA.
2. Fundamental of Statistics BY ELHANCE & ELHANCE.
3. Mathematical Statistics BY H.S.SHARMA
4. Differential & Integral Calculus BY RAY & SETH
5. Matrices BY RAY & SETH.

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<b>Course</b>	<b>BCA</b>
<b>Year/Semester</b>	<b>I year</b>
<b>Title of the Paper</b>	<b>DIGITAL COMPUTER ORGANIZATION</b>
<b>Paper</b>	<b>BCA-106</b>
<b>Maximum Marks (Theory)</b>	<b>40</b>
<b>Maximum Marks (Internal)</b>	<b>10</b>
<b>With effect from</b>	<b>2019-20</b>

## Course Objectives:

1. To study number system representations, binary codes and their arithmetic
2. To study Boolean algebra and digital logic design
3. To gain knowledge about memory devices PAL
4. To study the differentiation and integration and CPU organization
5. To study about input/output modules and data transfer scheme

## Course Outcomes:

1. Represent numerical values in various number systems and perform number conversions between different number systems with arithmetic.
2. Analyze and design digital combinational circuits like decoders, encoders, multiplexers, and de- multiplexers including arithmetic circuits (half adder, full adder).
3. Describe the concept of computer memory
4. Illustrate the fundamentals of different instruction set architectures and their relationship to the CPU design
5. Explain about computer buses, input/output modules and data transfer scheme



# The Bhopal School of Social Sciences, Bhopal

BCA I year

Paper VI

Paper Title: DIGITAL COMPUTER ORGANIZATION

Session: 2017-18

Max Marks: 40 (Theory)

CCE Marks: 10

## UNIT I

Data Representation: Number System: Binary, Octal, Hexadecimal, Conversions from one base to another, Binary Arithmetic, Octal and Hexadecimal -Addition and Subtraction, Unsigned binary number, signed magnitude number, Fixed-point and Floating point representation of numbers, BCD Codes, ASCII code, EBCDIC, Unicode, excess-3 code and gray code, 2's complement arithmetic. BCD and Excess-3- Addition and Subtraction.

## UNIT II

Binary Logic: Boolean algebra, Boolean Theorems, Boolean Functions and Truth Tables, Canonical and Standard forms of Boolean functions, Simplification of Boolean Functions, SOP and POS form, 3 and 4 variables Karnaugh Maps.

Digital Logic gates: Basic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates –XOR, XNOR, NAND, NOR, Multilevel NAND and NOR circuits. Building Circuit diagram using gates and truth table.

Combinational Circuits: Half-Adder, Full-Adder, Subtractor, Encoders, Decoders, Multiplexers, De-multiplexers, Sequential Circuits: Flip-flops-RS, D, JK, T & Master-Slave flip-flops, Registers, Counters.

## Unit III

Memory: Memory cells – SRAM and DRAM cells, Primary memory – RAM, ROM, PROM, EPROM, PLA programmable logic array, Secondary memory and its types, Internal Organization of a memory chip, Organization of a memory unit, Concept of cache memory, Organization and levels of cache memory, Concept of virtual memory, memory accessing methods: serial and random access.

Hardware support for memory management.

# The Bhopal School of Social Sciences, Bhopal

BCA I year

Paper VI

Paper Title: DIGITAL COMPUTER ORGANIZATION

Session: 2017-18

## UNIT IV

Bus, word length, processing speed, microprocessor, General architecture of CPU, types of registers: IR, MAR, MBR, Stack Pointer, ACC. Instruction format, Instruction set: data transfer instructions, Data manipulation instructions, program control instructions. Von Neumann model.

Types of CPU organization: Accumulator based, stack based and general based machine, Addressing modes: Direct, indirect, immediate, register and relative addressing modes. Basic introduction to CISC/RISC.

## Unit V

Data transfer modes: Serial, Parallel, Ethernet, USB, Wi-Fi, Bluetooth.

Data transfer scheme (1) programmed data transfer-Synchronous, Asynchronous Strobe Signal, Handshaking and Interrupt driven data transfer scheme, (2) Direct memory access data transfer. Burst mode and Cycle stealing mode.

## Text books &Reference books:

1. M. Morris Mano, Digital Logic and Computer Design, Prentice Hall of India Pvt. Ltd.
2. W. Stallings, "Computer Organization and Architecture - Designing for Performance.
3. Andrew S. Tanenbaum, Structured Computer Organization, Prentice Hall of India Pvt. Ltd.
4. J .P. Hayes, "Computer Architecture and Organization", McGraw-Hill,
5. Computer Fundamentals and Architecture by B.Ram.

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<b>Course</b>	<b>BCA</b>
<b>Year/Semester</b>	<b>I year</b>
<b>Title of the Paper</b>	<b>Accounting and Financial Management</b>
<b>Paper</b>	<b>BCA-107</b>
<b>Maximum Marks (Theory)</b>	<b>40</b>
<b>Maximum Marks (Internal)</b>	<b>10</b>
<b>With effect from</b>	<b>2019-20</b>

## Course Objectives:

1. To preparing financial statements in accordance with appropriate standards
2. To interpreting the business implications of financial statement information
3. To learn about Accounting ratios, fund flow
4. To judging product, project, divisional and organizational performance using managerial accounting information
5. To identifying organizational information technology components and risks that can affect financial systems and prescribing appropriate controls

## Course Outcomes:

1. Recognize and understand ethical issues related to the accounting profession
2. Prepare financial statements in accordance with generally accepted accounting principles.
3. Employ critical thinking skills to analyze financial data as well as the effects of differing financial accounting methods on the financial statements.
4. Describe the audit process from the engagement planning stage through completion of the audit, as well as the rendering of an audit opinion via the various report options.
5. Analyze the efficiency and profitability of business

**The Bhopal School of Social Sciences, Bhopal**  
**BCA I year**  
**Paper VII**  
**Paper Title: ACCOUNTING AND FINANCIAL MANAGEMENT**  
**Session: 2017-18**

**Max Marks: 40**  
**CCE Marks: 10**

**UNIT I**

Purpose of Accounting and Uses of Accounting Information ,The basic Financial Accounts, types of accounts, Rules of Entries of transaction, Journal.Cash Book – Types, Format of Cash book, Balancing of Cash Book, Subsidiary books – Purchase, Sales, Purchase return and sales return. Ledger, posting of entries. Double Entry book-keeping.

**UNIT II**

Trial Balance, Rectification of errors, adjustment entries.Depreciation and Inflation.Valuation of Assets and Depreciation Methods: Straight Line Method, Diminishing Balance Method, Sinking Fund Method, Insurance Method and Annuity Method.

**UNIT III**

Preparation of Financial Account: Trading Account, Profit and Loss Account and Balance Sheet.

**UNIT IV**

Finance function and its objectives, tools for financial analysis, capitalization, over capitalization analysis under capitalization.

**UNIT V**

Ratio analysis, funds flow and cash flow analysis, Meaning Interpretations of ratio, classification of ratio.

**Textbooks &Reference books**

1. Dr. S P Gupta, Management Accounting
2. I.M.Pandey, Financial Management
3. Financial Management by Khan and Jain
4. Management Accounting by Shashi K Gupta
5. Financial Accounts by S M Shukla
6. Financial Decision Making by Van Horne & James C
7. Financial Management and Policy by V. K. Bhalla
8. Double entry Book Keeping Accountancy Principles by T. S. Grewal
9. Advanced Accounting by R L Gupta
10. Accounting Principles by R N Anthony and Reece

# The Bhopal School of Social Sciences, Bhopal

Session : 2017-18

Paper Title: Lab-I

Max. Marks : 50

## Suggested List of Practicals for BCA I Year

### Office Automation Packages and Tools

#### Using MSWord

1. Create a document and apply different Editing options.
2. Create Banner for your college.
3. Design a Greeting Card using Word Art for different festivals.
4. Create your Biodata and use page borders and shading.
5. Create a document and insert header and footer, page title etc.
6. Implement Mail Merge.
7. Insert a table into a document.
8. Create a document and apply different formatting options.

#### Using MS Excel

1. Design your class Time Table.
2. Prepare a Mark Sheet of your class result.
3. Prepare a Salary Slip of an employee of an organisation.
4. Prepare a bar chart & pie chart for analysis of Election Results.
5. Prepare a generic Bill of a Super Market.
6. Work on the following exercises on a Workbook:
  - a. Copy an existing Sheet
  - b. Rename the old Sheet
  - c. Insert a new Sheet into an existing Workbook
  - d. Delete the renamed Sheet.
7. Prepare an Attendance sheet of 10 students for any 6 subjects of your syllabus. Calculate their total attendance, total percentage of attendance of each student & average of attendance.
8. Create a worksheet of Students list of any 4 faculties and perform following database functions on it.
  - a. Sort data by Name
  - b. Filter data by Class
  - c. Subtotal of no. of students by Class.

#### Using MS PowerPoint

1. Design a presentation of your institute using auto content wizard, design template and blank presentation.
2. Design a presentation illustrating insertion of pictures, Word Art and ClipArt.
3. Design a presentation, learn how to save it in different formats, copying and opening an existing presentation.
4. Design a presentation illustrating insertion of movie, animation and sound.
5. Illustrate use of custom animation and slide transition (using different effects).
6. Design a presentation using charts and tables of the marks obtained in class.
7. Illustrate use of macro in text formatting in your presentation.

### **Using MS Access**

1. Create a table "Student" for storing records of 5 students under following columns.
  - a. Scode, Sname, Result, Sclass.
2. Create a table for storing records of 5 employees for an organization-
  - a. ECode, EmpName, EmpDesig, EmpDept, EmpSal.
3. Display records of employee of Comp. Dept.
4. Write a query to select records of student table of class B.Com. II.
5. Write a query to display student name and result of pass student.
6. Display record of employee whose salary is greater than 30,000.
7. Create a table in MS Access under these columns:-
  - a. BookID, BookName, Author, Publication.
8. Delete a record from book table whose BookId = "1001".

# The Bhopal School of Social Sciences, Bhopal

Session: 2017-18

Paper Title: Lab-II

Max. Marks : 50

## Suggested List of Practicals for BCA I Year

### Programming in C

1. Write a program to print digits of entered number in reverse order.
2. Write a program to print sum of two matrices.
3. Write a program to print subtraction of two matrices.
4. Write a program to print multiplication of two matrices.
5. Write a program to demonstrate concept of structure.
6. Write a program for finding the root of a Quadratic Equation.
7. Write a program for generating Mark Sheet.
8. Write a program for finding the sum of given matrices of order m x n
9. Write a program for finding the multiplication of given matrices of order m x n
10. Write a program to generate even/odd series from 1 to 100.
11. Write a program to find area of a circle, rectangle, square using case.
12. Write a program to check whether a given number is even or odd.
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 recursive program to calculate factorial of a given number.
16. Write a program to generate a series  
 $1+1/1!+2/2!+3/3!+-----+n/n!$
17. Write a program to create a pyramid structure  
\*  
\*\*  
\*\*\*  
\*\*\*\*
18. Write a program to create a pyramid structure  
1  
12  
123  
1234
19. Write a program to create a pyramid structure  
1  
22  
333  
4444
20. Write a program to reverse a string.
21. Write a program to find whether a given string is PALINDROME or not.
22. Write a program to input 10 numbers, add them and find the average.
23. Write a program to generate series

$$1 + \frac{1}{2!} + \frac{1}{3!} + \dots + \frac{1}{n!}$$

24. Write a program to print table of any number.
25. Write a program to print Fibonacci series.
26. Write a program to find length of string without using function.
27. Write a program to perform all arithmetic operations using CASE statement.
28. Write a program to check entered number is Armstrong or not.