



हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

रायपुर नाका दुर्ग (छ.ग.)-491001

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क्र. 1747 / अका. / 2019

दुर्ग, दिनांक 21/9/19

प्रति,

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
हेमचंद यादव विश्वविद्यालय,
दुर्ग (छ.ग.)

विषय:- सत्र 2019-20 से बी.सी.ए. प्रथम वर्ष के नवीन पाठ्यक्रम को लागू करने विषयक।

—00—

विषयांतर्गत लेख है कि नवीन संशोधित अध्यादेश क्रमांक 107 की कंडिका 09 के आधार पर विश्वविद्यालय के कम्प्यूटर साईंस अध्ययनमंडल के सदस्यों द्वारा बैठक दिनांक 21.09.2019 में बी.सी.ए. प्रथम वर्ष के नवीन पाठ्यक्रम को सत्र 2019-20 से लागू करने की अनुशंसा की गई है।

उपर्युक्त बी.सी.ए. प्रथम वर्ष का नवीन पाठ्यक्रम स्नातक स्तर भाग-एक के लिए लागू किया जाता है स्नातक स्तर भाग दो एवं तीन के पाठ्यक्रम यथावत रहेंगे।

अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महाविद्यालय के शिक्षकों एवं छात्र-छात्राओं को अवगत कराने का कष्ट करेंगे।

टीप :- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाईट पर उपलब्ध है।

संलग्न : उपरोक्तानुसार


कुलसचिव

क्र. 1748 / अका. / 2019
प्रतिलिपि:-

दुर्ग, दिनांक 21/9/19

1. अध्ययनमंडल के समस्त सदस्यों को।
2. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।


सहा. कुलसचिव (अका.)

SCHEME OF EXAMINATION 2019-2020

BCA PART-I

Subject Code	Subject Paper	Theory Marks		Internal Marks		Teaching Load per Week		
		Max. (A)	Min. (B)	Max. (C)	Min. (D)	L	T	P
BCA101	Discrete Mathematics	80	27	20	8	4	2	-
BCA102	Computer Fundamentals	80	27	20	8	4	2	-
BCA103	Programming in 'C' language	80	27	20	8	4	2	-
BCA104	PC Software and Multimedia	80	27	20	8	4	2	-
BCA105	Web Technology and E-Commerce	80	27	20	8	4	2	-
BCA106	Communication skills	80	27	20	8	4	2	-
BCA107	LAB I: Programming Lab in 'C'	100	50	40	16	-	-	3x2
BCA108	LAB II: PC Software Lab	100	50	40	16	-	-	2x2
BCA109	LAB III: Web Technology Lab	100	50	20	8	-	-	1x2
TOTAL		780	312	220	88			
GRAND TOTAL	(PAPER + INTERNAL)	(A+C)		(B+D)				
		1000		400				

- Student will have to pass individually in all theory, practical and sessional.

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Max Marks: 80

Min Marks: 27

NOTE: - The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed no scientific calculator is allowed.

UNIT - I

Recall of statements and logical connectives, tautologies and contradictions, logical equivalence, algebra of propositions quantifiers, existential quantifiers and universal quantifiers.

UNIT - II

Boolean algebra and its properties, algebra of propositions as an example, De Morgan's Laws, partial order relations g.l.b., l.u.b. Algebra of electric circuits and its applications. Design of simple automatic control system.

UNIT - III

Boolean functions - disjunctive and conjugative normal forms. Boolean's expansion theorem, fundamental forms. Many terminal Networks.

UNIT - IV

Arbitrary Cartesian product of sets. Equivalence relations, partition of sets, injective, surjective, bijective maps, binary operations, countable, uncountable sets.

UNIT - V

Basic Concept of Graph Theory, Sub graphs, Trees and their properties, Binary Trees, Spanning Trees, Directed Trees, Planar graphs, Euler Circuit, Hamiltonian Graph. Chromatic number.

RECOMENDED BOOKS:

1. Boolean Algebra and its Application, J.E. Whitesitt, Courier Corporation.
2. Concepts of Modern Mathematics, P.L. Bhatnagar.
3. Discrete Mathematics, B.R.Thakur
4. Graph theory and its applications, Narsingh Deo, Dover publication.
5. A TextBook of Discrete Mathematics, Swapan Kumar Sarkar, S.chand.
6. Discrete Maths, C.L.Liu, T M Hill.

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NOTE: - The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

Unit-I Introduction to Computers

Computer system: characteristics and capabilities. Computer Hardware and Software: Block Diagram of a Computer, Different Data Processing: Data, Data Processing System, Storing Data, Processing Data. Types of Computers: Analogue, Digital, Hybrid, General and Special Purpose Computers. Generations of Computers. Computer Systems: Micros, Minis & Main-frames. Limitations of Micro Computer. **Number systems**- Decimal Number system, Binary number system, Octal & Hexadecimal number system, 1's&2's complement Codes- ASCII, EBCDI Codes, Gray code & BCD. **Logic Gates** - AND, OR, NOT GATES and their Truth tables, NOR, NAND & XOR gates

Unit-II Computer Peripherals:

Introduction to Input Devices : Categorizing Input Hardware, Keyboard, Direct Entry - Card Readers, Scanning Devices - O.M.R., Character Readers, Thumb Scanner, MICR, Smart Cards, Voice Input Devices, Pointing Devices - Mouse, Light Pen, Touch Screen. **Computer Output** : Output Fundamentals, Harcopy Output Devices, Impact Printers, Non-Impact Printers, Plotters, Computer output Microfilm/Microfiche(COM) systems, Softecopy Output Devices, Cathode Ray Tube, Flat Screen Technologies, Projectors, Speakers.

Unit-III Basic Components and Storage:

Central Processing Unit : The Microprocessor, control unit, A.L.U., Registers, Buses, Main Memory, Main Memory (RAM) for microcomputers, Read Only Memory(ROM). **Storage Devices** : Storage Fundamentals, Primary and Secondary Storage, Data Storage and Retrieval Methods - Sequential, Direct & Indexed Sequential, Tape Storage and Retrieval Methods Tape storage Devices, characteristics and limitations, Direct access Storage and Microcomputers - Hard Disks, Disk Cartridges, Direct Access Storage Devices for large Computer systems, Mass storage systems and Optical Disks, CD ROM.

Unit-IV Computer Software and Languages:

System Software: System software Vs. Application Software, Types of System Software, Introduction and Types of Operating Systems. Boot Loader, Diagnostic Programs, BIOS, Utility Programs. **Application Software**: Microcomputer Software, Interacting with the System, Trends in PC software, Types of Application Software, Difference between Program and Packages. **Computer Languages**: Definition, Generations of computer languages, Types of Languages, Language Processors: Assembler, Interpreter, Compiler, Linker and Loader. Programming constructs, Algorithm & flowchart.

Unit-V Introduction to MS DOS and Windows

Introduction to DOS: history and versions of DOS. Fundamentals of DOS: Physical Structure of the Disk, Compatibility of drives, Disks & DOS versions, Preparing Disks for use, Device Names. Getting Started with DOS: Booting Process (DOS, Windows, Unix), System Files and Command.com, Internal DOS Files & Directories, Elementary External DOS Commands, Creating a Batch Files, Additional Commands.

Microsoft Windows: Operating system-Definition & functions, basics of Windows. Basic components of windows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel-display properties, adding and removing software and hardware, setting date and time, screen saver and appearance. Using windows accessories Overview of LINUX/UNIX.

RECOMENDED BOOKS:

1. Introduction to Information Technology, V. Rajaraman, PHI, Second Edition.
2. Computer Fundamentals, P. K. Sinha, BPB Publications, Sixth Edition.
3. Fundamental of Information Technology: Chetan Shrivastava, Kalyani Publishers.
4. Computers Today: Suresh K Basandra, Galgotia Publicat

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NOTE :-The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

UNIT-I Fundamental of C

Overview of C : History of 'C', Structure of 'C' program, Keywords, Tokens, Data types, Constants, Literals and Variables, Operators and Expressions : Arithmetic operators, Relational operator, Logical operators, Expressions, Operator : operator precedence and associativity, Type casting, Console I/O formatting, Unformatted I/O functions: getch(), getchar, getche(),getc(), putc(), putchar().

UNIT- II Control Constructs

If-else, conditional operators, switch and break, nested conditional branching statements, loops: do...while, while, for, Nested loops, break and continue, goto and label, exit function.
Functions: definition, function components: Function arguments, return value, function call statement, function prototype. Types of function; Scope and lifetime of variables. Call by value and call by reference. Function using arrays, function with command line argument, User defined function: maths and character functions, recursive function.

UNIT-III Array, String Union and Structure

Array: Array declaration, One and Two dimensional numeric and character arrays. Multidimensional arrays.
String: String declaration, initialization, string manipulation with/without using library function.
Structure, Union and Enum- Structure: basics, declaring structure and structure variable, typedef statement, array of structure, array within structure, Nested structure; passing structure to function, function returning structure. **Union:** basics, declaring union and union variable, **Enum:** declaring enum and enum variable.

UNIT- IV Pointer

Definition of pointer, pointer declaration, using & and * operators Void pointer, pointer to pointer, Pointer in math expression, pointer arithmetic, pointer comparison, dynamic memory allocation functions – malloc, calloc, realloc and free, pointer vs. Array, Array of pointer, pointer to array, pointers to function, function returning pointer, passing function as argument to function, pointer to structure, dynamic array of structure through pointer to structure.

UNIT-V File Handling and Preprocessor

File handling: file pointer, file accessing functions: fopen, fclose, fputs, fgets, fprintf, fscanf, fread, fwrite, feof, fflush, rewind, fseek, ferror. File handling through command line argument.
Introduction to the Preprocessor: #include, #define, conditional compilation directives: #if, #else, #elif, #endif, #ifndef etc.

RECOMENDED BOOKS:

1. Programming in ANSI C, E Balagurusamy, Tata McGraw-Hill, Third Edition.
2. Let Us C, YashwantKanetkar, Infinity Science Press, Eighth Edition.
3. Mastering C, K R Venugopal, Tata McGraw-Hill.
4. The C Programming Language, Brian W. Kernighan, Dennis M. Ritchie, Prentice Hall, Second Edition.
5. Applications Programming in ANSI C, R. Johnsonbaugh, Martin Kalin, Macmillan, Second edition.
6. The Spirit of C, Mullish Cooper, Jaico publishing House.
7. How to solve it by Computer, R.G.Dromey, Pearson Education.

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Max Marks: 80

Min Marks: 27

NOTE: - The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

Unit - I MS-Word

Introduction to word processing software and it's features, creating new document, saving documents, opening and printing documents. **Home Tab:** setting fonts, paragraph settings, various styles(normal, no spacing, heading1, heading2, title, strong), find & replace, format painter, copy paste and paste special. **Insert Tab:** Pages, tables, pictures, clipart, shapes, header & footer, word art, equation and symbols. **Page Layout Tab:** Page setup, page background, paragraph (indent and spacing). **Mailing Tab:** create envelops and labels, mail merge. **Review Tab:** spelling and grammar check, new comment, Protect document. **View Tab:** document views, zoom, window (new window, split, switch window).

UNIT - II MS-Excel

Introducing Excel, use of excel sheet, creating new sheet, saving, opening, and printing workbook. **Home Tab:** Font, alignment, number, styles and cells and editing, conditional formatting. **Insert Tab:** Table, charts (column chart, pie chart, bar chart, line chart) and texts (header & footer, word art, signature line). **Page Layout Tab:** page setup options, scale to fit (width, height, scale). **Formulas Tab:** Autosum (sum, average, min, max), logical (IF, and, or, not, true, false), math & trig (sin, cos tan, ceiling, floor, fact, mod, log), watch window. **Data Tab:** get external data from MS Access, sort and filter options, Data validation, group and ungroup. **Review Tab:** protect sheet, protect workbook, share workbook. **View Tab:** page breaks, page layout, freezing panes, split and hide.

UNIT - III MS-PowerPoint

Introducing power point, use of power point presentation, creating new slides saving, opening, and printing. **Home Tab:** new slide, layout, reset, delete, setting text direction, align text, convert to smart art, drawing options. **Insert Tab:** Table, picture, clipart, photo album, smart art, shapes and chart, movie and sound, hyperlink and action, text box, word art, object. **Design Tab:** page setup options, slide orientation, applying various themes, selecting background style and formatting it. **Animations Tab:** custom animation for entrance, exit and emphasis, applying slide transition, setting transition speed and sound, animation on rehears timing. **Slide show & view Tab:** start slid show options, setup options. **View tab:** presentation views, colours and window option.

UNIT - IV MS-Access

Front end and back end of application, introduction to dbms, features of dbms, Creating blank databases, saving it in accdb format. Defining data types in ms access. **Home Tab:** datasheet view, design view, pivot chart view, pivot table view, sort and filter options. **Create Tab:** creating tables, creating reports, query wizard. **External Data Tab:** importing data from access and excel sheet, exporting data to excel and ms word. **Datasheet Tab:** Relationships, fields and columns options, datatype and formatting options.

UNIT - V Animations and Graphics

Definition of multimedia, application of Multimedia, Basic Concept of 2D/3D Animation, Principle of animation, Hardware and software resources requirement for animation, introduction of various file formats (.mpeg, .gif, .jpeg, .mp4, .tif, .flv). **Creating a new movie in flash :** Get set Up, Input Text, Animate Text, drawing and painting with tools, brush, create basic shapes like Oval, Rectangle & Polystar Tools, tools working with object & filing the object, Transformation, object properties dialog box, creating layers motion tweeing, shape tweeing, mask layers, basic action scripts, importing sound through Flash.

RECOMENDED BOOKS:

1. Microsoft Office 2007 fundamentals, L Story, D Walls.
2. MS Office, S. S. Shrivastava, Firewall Media.
3. Office 2000 made easy, Alan Neibauer, Tata McGraw Hill.
4. FLASHMX Bible -Robert Reinhart
5. Sams Teach Yourself Macromedia Flash 8 in 24 Hours, Phillip Kerman.
6. How to do everything with Macromedia, Bonnie Blake, Doug Sahlin
7. Multimedia Making it works, Tay Vaughan, Tata McGraw Hill

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Max Marks: 80

Min Marks: 27

NOTE :- The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

UNIT-I Basics of Internet

History, Evolution, Internet applications, Intranet, WWW, Emergence of Web, Web page, Web Site, client, Web Servers, Web Browser, Web concept, Search Engine, URL, DNS, Internet Connection, Internet Service Provider, Web Design Strategies, OSI and TCP/IP model, various protocols like HTTP, FTP, SMTP, TELNET. Internet services: Email concept, Sending and receiving secure Email, Voice and video Conferencing, web Based chat services, Chat Services, Internet Messaging, Internet Relay Chat, News Group.

UNIT-II HTML

Introduction, Html version, HTML tags, Creating headings on a web pages :Aligning the headings, creating list, Working with Links: Creating a Hyperlinks ,Setting the Hyperlink Colors, Linking Different sections of A web page, Creating Paragraph, Working with Images, using Images as Links, Working with Tables, Working with Frames: Creating a Frame, Creating Vertical and Horizontal Frames, Setting the Frame Border Thickness, Applying Hyperlink Targets to a Frame, Creating an HTML Form, Specifying the Action URL and Method to Send the Form, Using the HTML Controls.

UNIT-III DHTML and Java Script

DHTML: Introduction, Cascading style sheet (CSS), Inline Style sheet, External Style Sheet, Internal Style Sheets, DHTML document object model, Event handling.

Java Script: Introduction, Language elements, Variables, operators, control statement Array and function in JavaScript, Objects of Java script, Client-Side and server side Java script, Benefits of using JavaScript, Embedding JavaScript into HTML Page, Handling Events, overview of VB Script.

UNIT-IV Introduction to PHP

Features, Advantages of PHP over other scripting languages, Installing, creating and running PHP script, working with variable, constant, operators in PHP, Control statements, Looping constructs, String function, Arrays, User defined function, Working with forms, Accessing database through PHP.

UNIT-V Introduction to E Commerce

Definition of E-commerce, The scope of E-commerce, Definition, Internet and its impact on traditional businesses, E-payment System, Security threats with E-commerce. Types of E-commerce: Business-to-Business (B2B), Business-to-Consumer (B2C), Business-to-Business-to-Consumer (B2B2C), Consumer-to-Consumer (C2C), E-market, Future of E-market.

RECOMENDED BOOKS:

1. Web Technology, A developer's Perspective, N.P Gopalan and J. Akilandeswari, PHI publication.
2. Web Technologies: HTML, JAVASCRIPT, PHP, JAVA, JSP, ASP.NET, XML and Ajax, Black Book by Dream Tech Press.
3. Internet : The Complete Reference Millennium Edition Margaret Levine Young, Doug Muder.
4. The Complete Reference: HTML and CSS, Thomas A. Powell ,McGrawHill.
5. JavaScript The Complete Reference,Thomas Powell, Fritz Schenider, McGrawHill, Third Edition
6. Introduction To HTML,Kamlesh N.Agrawal ,O.p,Vyas ,P.A.Agrawal
7. Web Technology and Design, Xavier,C,New Age International.
8. HTML, DHTML,JavaScript,Perl and CGI, Ivan Bayros,BPB Publication.
9. Internet and Web Design, Ramesh Bangia ,New Age International.
10. Business on the net, Kamlesh N. Agarawala, Amit Lal & Deeksha Agarawal, Macmillan India Ltd.

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NOTE: - The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

OBJECTIVE

This course is designed to enable the students of computer education to speak and write English with a fair degree of grammatical correctness. The inputs in the course contents are designed to let the students develop their communication skills and effectively write and speak in business scenario.

UNIT - I

Structure of sentences- Simple, Complex and Compound.
Clauses: Co-ordinate and Subordinate Clause.
The tenses and aspects. Modal, Gerund, Participle: Non Finite and Finite, Infinitive.

UNIT - II

Transformation of sentences:-
Interchange of Active and Passive Voice.
Interchange of Affirmative and Negative Sentences.
Interchange of Explanative and Assertive Sentences.
Interchange of interrogative and Assertive Sentences.
Direct and Indirect Speech.

UNIT - III

Report writing.
Applications writing
Letter writings: Formal (Enquiry letter, Order letter, Complaint letter Sales Letter) and Informal,
Description of events.

UNIT- IV

Precis Writing
Reading Comprehension
Summarising
Paraphrasing
Presentation Skills

UNIT-V

Official Communication- Notice, Circular, Minutes of meeting, Agenda of meeting, Memorandum
Modern media of communication- Email(Language of Emails, Format, E-mail writing Strategies, Advantage, Characteristics, Formatting) Video conferencing, Fax

RECOMENDED BOOKS:

1. Living English Structure by W.S. Allen.
2. A Practical English Grammar by Thomson and Martinet.
3. English Grammar and Composition by Wren & Martin
4. Advance Grammar in Use by Martin Hewings
5. Essentials of Business Communication by Rajendra Pal and J.S. Korlahalli
6. Effective Technical Communication by M Ashraf Rizvi

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Bridge course for BCA (Only For Non mathematics Students)

Max Marks: 50

Min Marks: 17

Note: Fundamentals of the topics are to be dealt to enable the students to understand the Topics. The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.. Only Simple calculator is allowed not scientific.

UNIT -I**Algebra**

Partial fractions, Arithmetic Progression & Geometric Progression, Determinants and matrices, Inverse matrix.

UNIT-II

Permutation combination, method of induction, Binomial Theorem for positive integral index, And any index (without proof), Exponential and logarithmic series.

UNIT-III**Trigonometry**

Measurement of angles, Trigonometric ratios, simple formula, compound angles, Trigonometric ratios of multiple and sub multiple angles. Height and Distance, Inverse Function.

UNIT-IV**Geometry**

Locus, Cartesian coordinate system, Distance formula, Section formula, Slope of a straight line various forms, Angle between two lines, pair of straight lines, parabola, ellipse and hyperbola.

UNIT-V**Statistics**

Frequency Distribution, Measures of central tendency, Mean, Median, Mode, G.M., H.M., Inter quartile range, Mean deviation, Standard deviation.

RECOMENDED BOOKS:

Mathematic (class XI and XII), R.D.SHARMA

YOUGBODH Mathematics, (class XI and XII)

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BCA I

BCA-107 LAB I: Programming Lab in 'C'

Max Marks: 100

Min. Marks: 50

Scheme of Examination- Practical examination will be three programs. It will be of 3 hours duration. All programs must carry flow charts & algorithms. The distribution of practical marks will be as follows -

Program 1	20
Program 2	20
Program 3	20
Viva	25
Practical Record	15
Total	100

Note: All these Programs and similar types to these can be made in Practical File. Practical file should contain printed programs with name of author, date, path of program, unit no, output, screenshots etc. There should be comment wherever applicable.

List of Practical

Input and Output, Formatting

1. Write a program in which you declare variable of all data types supported by C language. Get input from user and print the value of each variable with alignment left, right and column width 10. For real numbers print their values with two digits right to the decimal.

Loops, Decisions

2 Write program to generate following pattern

a)

```

ABCDEFGFG
ABC  EFG
AB   FG
A    G

```

c)

```

  *
 * * *
* * * * *

```

b)

```

1
1 2
1 2 3
1 2 3 4

```

d)

```

1
1 2 1
1 3 3 1
1 4 6 4 1

```

3. Write program to display number 1 to 10 in octal, decimal and hexadecimal system.

4. Print sin series up to n terms and its sum.

5. Write a program to perform following tasks using switch...case, loops, and conditional operator (as and when necessary).

- a) Find factorial of a number
- b) Print Fibonacci series up to n terms and its sum.
- c) Print prime numbers up n terms.
- d) Print whether a given year is leap or not.

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Array

- 6. Create a single program to perform following tasks using switch, if,else, loop and single dimension character array without using library function:
 - a) To reverse the string.
 - b) To count the number of characters in string.
 - c) To copy the one string to other string.
 - d) To find whether a given string is palindrome or not.
 - e) To count no. of vowels, consonants in each word of a sentence and no. of punctuation in sentence.

- 7. Write a program that read the afternoon day temperature for each day of the month and then report the month average temperature as well as the days on which hottest and coolest days occurred.

- 8. Create a single program to perform following tasks using switch, if,else, loop and double dimension integer array of size 3x3:
 - a) Addition of two matrix.
 - b) Multiplication of two matrix.
 - c) Sum of diagonal elements

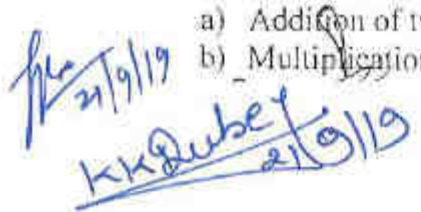
- 9. Create a single program to perform following tasks using switch, if,else, loop and double dimension character array of size 5x40:
 - a) Sorting of string
 - b) Finding the smallest string.
 - c) Searching for presence of a string in array

Functions

- 10. Write program using the function power (a, b) to calculate the value of a raised to b.
- 11. Write program to demonstrate difference between static and auto variable.
- 12. Write program to demonstrate difference between local and global variable.
- 13. Write a program to perform following tasks using switch...case, loops and function.
 - a) Find factorial of a number
 - b) Print Fibonacci series up to n terms and its sum.
- 14. Write a program to perform following tasks using switch...case, loops and recursive function.
 - a) Find factorial of a number
 - b) Print Fibonacci series up to n terms and its sum.
 - c) Print natural series up to n terms and its sum
- 15. Write a function to accept 10 characters and display whether each input character is digit, uppercase letter or lower case letter.

Array & Function

- 16. Create a single program to perform following tasks using switch, if,else, loop, function and double dimension integer array of size 3x3:
 - a) Addition of two matrix.
 - b) Multiplication of two matrix.



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- 17. Create a single program to perform following tasks using switch, if, else, loop, user defined function and single dimension character array:
 - a) To reverse the string.
 - b) To find whether a given string is palindrome or not.

Structure & Union

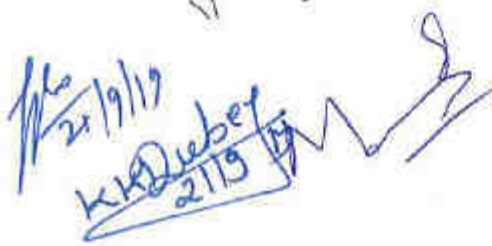
- 18. Create a structure Student having data members to store roll number, name of student, name of three subjects, max marks, min marks, obtained marks. Declare a structure variable of student. Provide facilities to input data in data members and display result of student.
- 19. Create a structure Date with data member's dd, mm, yy (to store date). Create another structure Employee with data members to hold name of employee, employee id and date of joining (date of joining will be hold by variable of structure Date which appears as data member in Employee Structure). Store data of an employee and print the same.
- 20. Create a structure Student having data members to store roll number, name of student, name of three subjects, max marks, min marks, obtained marks. Declare array of structure to hold data of 3 students. Provide facilities to display result of all students. Provide facility to display result of specific student whose roll number is given

Pointer

- 21. Write a program of swapping two numbers and demonstrates call by value and call by reference.
- 22. Write program to sort strings using pointer exchange.
- 23. Write program to find biggest number among three numbers using pointer and function.
- 24. Write program to Create a structure Employee having data members to store name of employee, employee id, salary. Use Pointer to structure to store data of employee and print the stored data-using pointer to structure.
- 25. Write program to demonstrate difference between character array and pointer to character
- 26. Write program to demonstrate pointer arithmetic.

File Handling

- 27. Write program to copy content of one file to other file removing extra space between words name of files should come from command line arguments.
- 28. Write program to create a file 'data' containing a series of integers and count all even numbers present in the file 'data'.
- 29. Write a program to count no. of tabs, new lines, character and space of a file.
- 30. Write a program to read item number, rate and quantity from an inventory file and print the followings:
 - a) Items having quantity > 5.
 - b) Total cost of inventory.



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Scheme of Examination:

Practical examination will be of 3 hours duration. The distribution of practical marks will be as follows:

Program 1	-	15
Program 2	-	15
Program 3	-	15
Program 4	-	15
Viva	-	25
Practical Record	-	15
Total	-	100

Note: All these Programs and similar types to these can be made in Practical File. Practical file should contain printed programs with name of author, date, path of program, unit no, output, screenshots etc. There should be comment wherever applicable.

MS-WORD

Q1. Open a document. Type the following text and perform the tasks as instructed below:

Working with Word Processor...

As already mentioned, a word processor is a package that processes textual matter and creates organized and flawless documents. In addition to it a word processor not only remove all the limitation of typewriter but also offers various useful features that cannot be even dreamt of with typewriter.

Also if same textual matter is to be reproduced with minor changes, retyping the only option in typewriters.

The word processing (and word processor) originated way back in 1964 when special typewriters. Magnetic tape Selectric typewrites (MIST) were launched by IBM (International Business Machines).

(i). Insert the following text after the first paragraph:

"The main components of a word processing system are listed below";

- ☐ Computer
- ☐ Printer
- ☐ A word processing software

(ii). Save the document as Word.doc?

(iii). Move the second paragraph to the end of the document by using drag and drop?

(iv). Move the second paragraph to the end of the document using cut, paste operation?

(v). Undo the above action?

(vi). Redo the above action?

(vii). Go to end of the document (in one step)?

(viii). Go to beginning of the document (in one step)?

(ix). Insert page break before the paragraph?

Handwritten signature: *Pr*, date: *21/9/19*, and other scribbles.

Handwritten initials: *ph*, date: *21/9/19*

Handwritten signature: *Sahana*, date: *21.9.19*

- (x). Search the word "Computer" in your document with options 'Match Case'. find whole words only?
- (xi). Replace the word "Typewriter" with word "Processor" in your document?
- (xii). Undo the above action?
- (xiii). Remove all page breaks from your document?
- (xiv). Change the magnification of your document to different percentage using zoom?
- (xv). Write the above written paragraphs and give the options as follows:-
 - ↓ Assignment Justified
 - ↓ Indentation: Left 0.2
 - ↓ Right 0.2
 - ↓ Spacing: before 6 pt. and after 6 pt.
 - ↓ Special : First line by 0.4"
 - ↓ Line-spacing 1.5 lines
- (xvi). Set the default tab stop to 0.3"?
- (xvii). Set the margins to 1.25?
- (xviii). Format the page using?
 1. Left margin:0.5, right margin:0.5
 2. Top margin:1.5, bottom margin:0.5
 3. Gutter margin: -
 - ❖ indentation: left 0.2, right:0.2
 4. Header margin: 0.5.
- (xix). Format the each occurrence of group of words "Word Processor" as bold, italic, underline and small caps using find and replace with formatting options?
- (xx). Align the heading to center and make it bold, underlined and italicized.

Q2: Type the text as shown below and perform the tasks as directed:

Computers
 Computer is an electronic device that processes and gives meaningful information.
 Computers are being used in almost all the fields today
 Expert systems:
 Human thinking and artificial intelligence
 Can computer think?
 AI at work today: Natural Language program and Expert system.

The impact of computers on people:
 The positive impact
 The potential dangers

The impact of computers on organizations
 The information processing industry
 The positive impact on using organizations
 The potential dangers for using organizations

- (i). Search for the word 'computer' in the entire document. All the occurrences of the given word are to be searched irrespective of the case?
- (ii). In the above question note that word also searches 'computerization' and 'computerizations'. Now make sure that this time Word searches only for the word 'computer' in the entire document.

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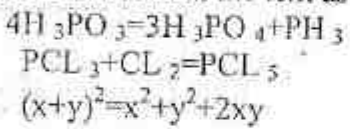
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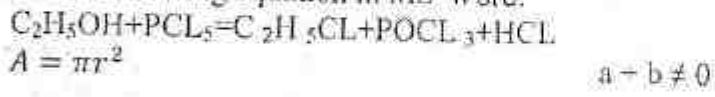
[Signature]
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- (iii). Change the entire uppercase letter to lowercase?
- (iv). Give a heading to the above written text 'COMPUTERS IN TODAY'S WORLD'?
- (v). Center aligns the heading text 'computer' that appears in first line.
- (vi). Apply outside border to entire document.
- (vii). Apply outside border to the just heading text.
- (viii). Change page setup according to the following specifications:
 - > Top margin: 1.5", bottom margin: 1.5"
 - > Gutter: 1" left margin: 1.5"
 - > Right margin: 1"
 - > Page width: 7.5", page height: 6.5"
 - > Page width: 7.5", page height: 6.5"
 - > Orientation: portrait.
- (ix). Give a header 'Creations' and footer 'The school of computing'. The footer should also consist of page no's?
- (x). Give appropriate commands for giving different header and footers for first page and odd and even pages?
- (xi). Save and close the document.

Q3. Type text and format the text as show below:



Q4. Write the following equation in MS-Word:



$a + b \neq 0$

Q5. Write the following in MS-Word:

- ↓ Preheat the oven to 220°C.
- ↓ Copyright ©
- ↓ Registered ®
- ↓ Trademark ™

Q6. Create the following table in MS-Word:

Name	Rahul		
Roll No.		101	
Subject	Max	Min	Obtain
Java	100	33	75
Multimedia	100	33	70

Q7. Create a document in MS-Word. Set the watermark as Microsoft. Also write the following text as formatted below:

Measuring programming progress by lines of codes is like measuring aircraft building progress by weight.

—BILL GATES

Q8. Create the following:



Q9. Create the following:



Computer

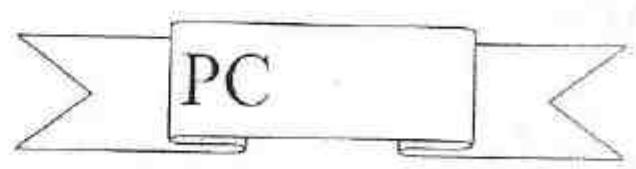
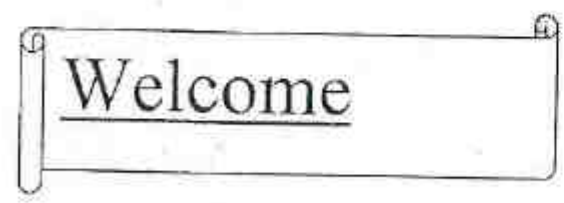
Q10. Create the following table in MS-Word:-
Admission 2005-06

Course	OC	BC	MBC	SC/ST	TOTAL
Computer science	9	18	5	5	37
Commerce	14	25	6	5	50
Mathematics	12	20	4	4	40

Q11. Create table as shown:-

	Car	Price
Maruti	Omni Van	200000
	Maruti 800	242000
Tata	Sumo	390000
	Sierra	447000

Q12. Insert the following in MS-Word.



Q13. Insert the following in MS-Word.



Q14. Write the following in MS-Word.

- > This is sentence case.
- > this is lowercase.
- > THIS IS UPERCASE.
- > This Is Capitalize Each Word.
- > This IS Toggle cASE.

Q15. Create the following in MS-Word:

- Actors
 - > Bruce Willis
 - > Gerard Butler
 - > Vin Diesel
- Actress
 - > Julia Roberts
 - > Angelina Jolie
 - > Kate Winslet
 - > Cameron Diaz

Q16. Write the following in MS-Word:

Cricket Players

A. Batsman

- I. Sachin Tendulkar
- II. Rahul Dravid
- III. Virendra Sehwag

B. Bowler

- a. Kumble
- b. Zeheer Khan
- b. Balaji

C. Spinner

- a) Harbhajan
- b) Kumble
- c) Kartik

Q17. Write a letter to send invitation to your friend inviting on your birthday.

Q18. Create label for your friends address.

MS-Excel

1. Create the following worksheet and save the worksheet as wages.xls

PACE COMPUTERS (ATC CEDT), Govt. Of India

Payroll For Employee (Temporary)

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Handwritten signature and date: 21/9/19

Today's date 2-Mar-17
Pay Rate 900

Worker's Name	Hired On	days Worked	Gross Wages
Mahendra	3-Feb-17		
Anand	4-Feb-17		
Ashish	5-Feb-17		
Santosh	6-Feb-17		

(I) Calculate Days worked and gross wages.

2. Create the following worksheet and save the worksheet as wages.xls

Name	Basic (monthly) (Rs.)	HRA (% of Basic)	DA (Rs.)	Total Salary (2016)	Bonus (Rs.)	Total (Salary) (2017)	% Increase
Jaya	9300	20	1250		2300		
Padma	15600	22	1380		2700		
Jaanvi	18500	19	1436		3000		

- (i) To calculate the total salary as sum of Basic salary, HRA, DA for each employee for year 2017.
- (ii) Calculate total salary for year 2017 as sum of salary of 2016 and bonus.
- (iii) Calculate % increase in salary from 2016 to 2017.

3. Create a worksheet as follows:

Pace Computer (ATC CEDT) Govt. Of India
Payroll for Employee (Permanent)

empcode	name	doj	salary	bonus	net salary
E001	Ayushi	3-Feb-16	17000		
E002	Sanjeet	4-Mar-15	19000		
E003	Jayant	3-Jan-17	18000		
E004	Aishwarya	6-Mar-15	17500		

- (i) Allow bonus 12000 to employees having service > 2 years other wise allow bonus 7000.
- (ii) Find net salary as sum of bonus and salary.

4. Create the worksheet as follows:

RollNo	Name	English	Maths	Total	Average	Division
101	Parul	95	99			
102	Prasad	92	95			
103	Neelkanth	70	69			
				Class Average		

- (i) Find total of two subjects for each student.
- (ii) Find average of two subject for each student.
- (iii) Find class average as average of average column
- (iv) Find division of student as first, second, third assume percentage of division of your own and maximum marks in each subject as 100
- (v) Apply Conditional formatting for division column, first division should be in bold, second division should be in italic and third division should be in underline

5. Create macro in excels to make selected cell, bold italic, outside bordered and center across select.

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6. Create bar chart with given data:

Content	2015	2016	2017
tea	19	23	25
coffee	22	24	22
sugar	45	40	45

- (i) Provide heading production detail.
- (ii) Provide z axis title; lacks metric tonne.
- (iii) Provide x axis title year.

7. Create a table with column heading as shown below and using form perform data entry of records.

Zone	Department	Employee	Salary
West	Marketing	Mukesh	10500
East	Sales	Rahul	20000
South	Marketing	Suresh	5500
North	Marketing	Anju	25000
South	Sales	Neeraj	8000
North	Sales	Ajay	8000
South	Marketing	Mahesh	7500
West	Sales	Rajesh	4500

- (i) Sort the data according to Zone then by Department.
- (ii) Use Group and Outline feature to show & hide details.

8. Create a table with column heading as shown below and using form perform data entry of records.

Zone	Department	Employee	Salary
West	Marketing	Mukesh	10500
East	Sales	Rahul	20000
South	Marketing	Suresh	5500
North	Marketing	Anju	25000
South	Sales	Neeraj	8000
North	Sales	Ajay	8000
South	Marketing	Mahesh	7500
West	Sales	Rajesh	4500

- (i) Use filter command to show records having zone: West.
- (ii) Use filter command to show records having zone: West and salary less than 5000.
- (iii) Use filter command to show records having salary greater than 10000.

9. Create Pivot table using Data of exercise 8.

10. Suppose a database exists in ms-access Your are required to import the data . How will You?

11. Create a table using table feature

Principle 1500
Rate 4%
Time 5

300	3	4	5
1%	45	60	75
2%	90	120	150
3%	135	180	225

12. Using goal seek feature find out the interest rate it must be to earn interest 500

Principle 1500
Rate 4%
Time 5

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Q.13 Look at the following table where angle is given in degrees. Using various trigonometric functions available in excel, write steps to calculate angles in required formats.

Angle (Degrees)	Angle (Radians)	Sin	Cos	Tan	Cosec	Sec	Cot
0							
30							
45							
60							
90							

Q.14 Using Floor and Ceiling functions write steps to calculate

(a). nearest greatest height which is less than or equal to the given height

(b). nearest least height which is greater than or equal to given height

Height	Nearest Greatest age less than or equal to given height	Nearest least age greater than or equal to given height
15.6		
30.7		
-34.2		

Q.15 if age is given in months, break it in year and moths separately (as shown in example below).

AGE (In Months)	Age	
	Year	Month
25	2	1
35		
45		

Q.16 if you have cards of 3 different colors. In how many different ways you can arrange those cards. Which formula will you prefer to do so?

MS-POWERPOINT

Q1. Create a PPT of At least 10 slides with one slide for comparison, one slide displaying a chart with the table.

Q2. Create a PPT presentation use rehearse timing for the slide show.

Q3. Create a PPT presentation slide import sound and video clips.

Q4. Create PPT presentation with hyper linking.

Q5. Create PPT presentation and apply themes and transition.

MS-ACCESS

1. Create Following Tables in Access

a). tblProducts

Field Name	Data Type
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ProductID	AutoNumber
ProductName	Text Field Size (50)
QuantityOnHand	Data type-Number Field Size-Integer
Cost	Data type-Number Field Size-Single
SalesPrice	Data type-Number Field Size-Single

Primary Key - ProductID

b). tblCustomer

Field Name	Data Type
CustomerID	AutoNumber
CustomerName	Text Field Size (40)
ContactNo	Text Field Size (10)

Primary Key - CustomerID

c). tblSales

Field Name	Data Type
SalesID	AutoNumber
CustomerId	Data type-Number Field Size-Integer
InvoiceNumber	Text Field Size (10)
InvoiceDate	Date

Primary Key - CustomerIdInvoiceNumber

d). tblSalesDetail

Field Name	Data Type
SalesDetailID	AutoNumber
SalesId	Data type-Number Field Size-Integer
ProductId	Data type-Number Field Size-Integer
Quantity	Data type-Number Field Size-Integer
SalesPrice	Data type-Number Field Size-Single

Primary Key SalesIdProductId

2. Set Relationship among tables.
3. Create Data entry Screen for products and customer table and enter below data in corresponding table.
Data for tblProduct

ProductName	QuantityOnHand	Cost	SalesPrice
1 TB Toshiba HDD	10	3600	3800
16 GB HP Pen Drive	20	450	500

Data for tblCustomer

CustomerName	ContactNo
Nagendra Dewangan	9827123456
Mahendra Soni	9827123657

4. Create a single combined Data entry screen for Sales & SalesDetail table using master detail concept and enter following 2 Records.
CustomerName: Nagendra Dewangan

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 PH 21/9/19

Invoice Date: 2-Mar-2017

Product Name	Quantity	Sales Price
1 TB Toshiba HDD	5	3800
16 GB HP Pen Drive	3	500

Customer Name: Mahendra Soni
 Invoice Number: Sal/19/2
 Invoice Date: 3-Mar-2017

Product Name	Quantity	Sales Price
1 TB Toshiba HDD	4	3800
16 GB HP Pen Drive	2	500

5. Create Sales Bill Report.
6. Validate data in tables as well as in data entry screen.

Flash

1. Create a Flash movie to create mask.
2. Create a Flash movie to create Fade In/Fade Out in four pictures.
3. Create a Flash movie to create the symbol of a wheel and scale and rotate it.
4. Create a flash movie to create growing circles.
5. Create hand writing in Flash.
6. Create a Flash movie of a moving car with rotating wheels.
7. Transform a circle into a square using shape tween.
8. Create a Flash movie to import text from MS-Word and apply different transformations.
9. Create a Flash movie to demonstrate onion skin markers.
10. Create a Flash movie to demonstrate motion guide.

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BCA I

BCA-109 LAB III: Web Technology Lab

Max Marks: 100

Min. Marks: 50

Practical List

Scheme of Examination- Practical examination will be of three programs. It will be of 3 hours duration. The distribution of practical marks will be as follows -

Program 1 (HTML)	15
Program 2 (DHTML)	15
Program 3 (JavaScript)	15
Program 4 (PHP)	15
Viva	25
Practical Record	15
Total	100

Note: All these Programs and similar types to these can be made in Practical File. Practical file should contain printed programs with name of author, date, path of program, unit no, output, screenshots etc. There should be comment wherever applicable.

Internet

1. Creating Email account.
2. Configuring Web server for Local Computer.
3. Working with various search engines (Google, Yahoo, Bing, etc.)
4. Browsing up various websites (e.g. Railway Reservation, Airline Reservation, Cinema Ticket Booking, Bill payments etc.)
5. Online payment procedure (any one).

HTML

6. Write an HTML program to create the following table:

Class	Subject1	Subject2	Subject3
BCA I	Visual Basic	PC Software	Electronics
BCA II	C++	DBMS	English
BCA III	Java	Multimedia	CSA

7. Write an HTML program to create the following lists:

- C
- C++
- FORTRAN
- COBOL

8. Write an HTML program to create the following lists:

1. Java
2. Visual Basic
3. BASIC

4. COBOL

9. Write an HTML program to demonstrate hyperlinking between two web pages. Create a marquee and also insert an image in the page.

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- 10. Create a Web Page which contains information about your favourite freedom fighters. Design the page with attractive background colour, text colour, image etc.
- 11. Write an HTML document to print your bio-data in a table format.
- 12. Write an HTML program to create the following table:

Car Price List

Maruti		Tata		Ford	
Model	Price	Model	Price	Model	Price
Maruti 800	2 Lac	Sumo	2 Lac	Ikon	5 Lac
Omni	3 Lac	Scorpio	3 Lac	Gen	2 Lac

- 13. Write an HTML program to create the following table:

Students Records

Name	Subject	Marks
Arun	Java	70
	C	80
Ashish	Java	75
	C	69

- 14. Create an HTML document and embed a flash movie in it.
- 15. With the Frameset Tag and Frame Tag Create the following Document:

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

- 16. Write an HTML program to create a web page with an image as background and the following text:
New Delhi

New Delhi, the capital and the third largest city of India is a fusion of the ancient and the modern. The refrains of the Muslim dynasties with its architectural delights, give the majestic ambience of the bygone era.

On the other side New Delhi, the imperial city built by British, reflect the fast paced present. The most fascinating of all is the character of Delhi which varies from the 13th present century mausoleum of the Lodi kings to ultra modern glass skyscrapers.

- 17. Create the following HTML form.



- 18. Create the following HTML form.

Handwritten signatures and dates at the bottom of the page:

- Signature: *Shamans*, Date: 21.9.19
- Signature: *[unclear]*, Date: 21/9/19
- Signature: *[unclear]*, Date: 21/9/19
- Signature: *[unclear]*, Date: 21/9/19
- Signature: *[unclear]*, Date: 21/9/19

- 19. Design a Web Page, Insert an image on to the web page such that image is of height 300 and width 300 pixels. The image should have an ALT text in it.
- 20. Design a Html page for the following
 - 1. Set an image as a link
 - 2. Open a link in a new browser window
 - 3. Jump to another part of a document (on the same page)
 - 4. How to link to a mail message with CC, BCC and Subject Entries
 - 5. Redirect a user to another URL after 5 seconds

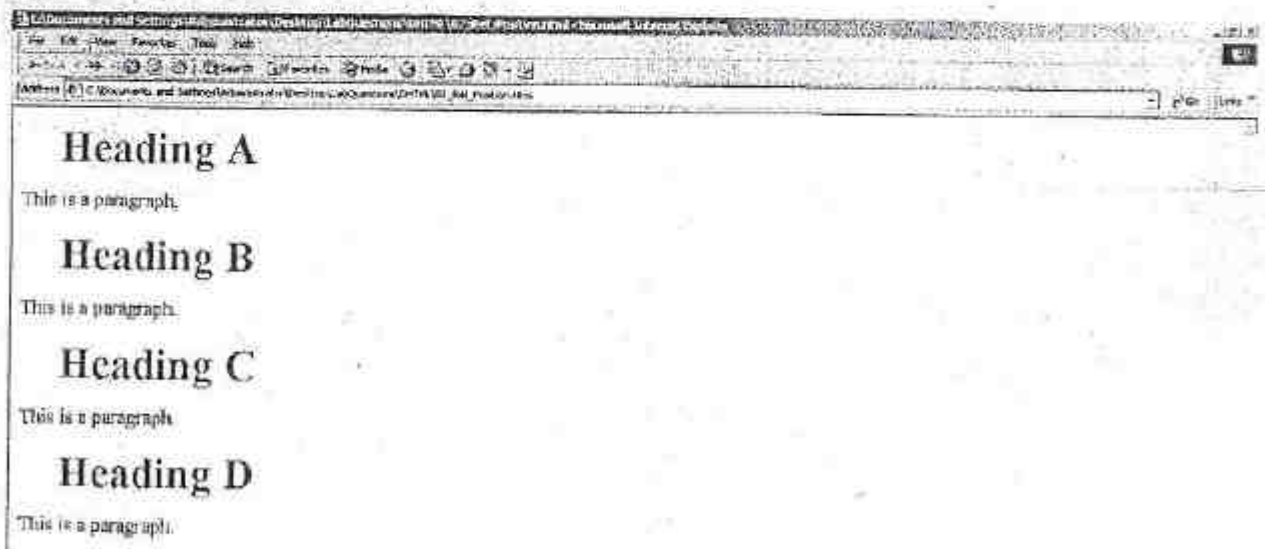
JAVASCRIPT

- 21. Create a script using for loop to prime n. between 1 and 50.
- 22. Write a script to get the largest value in an array.
- 23. Write a function to calculate the factorial of a number (a non-negative integer).
- 24. Write a script to demonstrate data validation.
- 25. Write a program to print date using JavaScript.
- 26. Write a program to Sum and Multiply two numbers using JavaScript.
- 27. Write a program to Show use of alert, confirm and prompt box.
- 28. Write a program to redirect, popup and print function in JavaScript.
- 29. Create validation Form in JavaScript.
- 30. Write a JavaScript program to change background color after 5 seconds of page load.

DHTML

- 31. Create a Web Page which shows the changes of header dynamically.
- 32. Create a Web page which explains the use of relative positioning.

Output:



- 33. Display an alert box to alert the x and y coordinates of the cursor.
- Output:



- 34. Design a Web page to, if the user right clicks on the document area an alert box should appear instead of short-cut menu.
- 35. Design a Web page to display a Digital Clock.

PHP

- 36. Create a script using for loop to add all the integers between 0 and 30 and display the total.
- 37. Create a script to construct the following pattern, using nested for loop exercises.
- 38. Write a PHP script to get the largest key in an array.
- 39. Write a function to calculate the factorial of a number (a non-negative integer).
- 40. Write a PHP script to check string for palindrome.

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