



M.D. UNIVERSITY, ROHTAK

SCHEME OF STUDIES AND EXAMINATION

1-year Diploma in Computer Applications

Scheme and Syllabus

1st Semester

Course Code	Course Name	Hours/week	No. of Credits	Internal Assess.	Theory	Practical	Max. marks	Duration of Exam
21DCA-101	Computer Fundamentals	4	4	10	40	-	50	3 Hrs
21DCA-102	Windows and MS Word	4	4	10	40	-	50	3 Hrs
21DCA-103	MS Excel and PowerPoint	4	4	10	40	-	50	3 Hrs
21DCA-104	MS office and Typing Lab	2	2	25	-	25	50	3 Hrs
Total			14	55	120	25	200	

2nd Semester

Course Code	Course Name	Hours/week	No. of Credits	Internal Assess.	Theory	Practical	Max. marks	Duration of Exam
21DCA-201	Number System and Basic of C Programming	4	4	10	40	-	50	3 Hrs
21DCA-202	Internet Fundamentals	4	4	10	40	-	50	3 Hrs
21DCA-203	Data Communication	4	4	10	40	-	50	3 Hrs
21DCA-204	Internet Lab	2	2	25	-	25	50	3 Hrs
Total			14	55	120	25	200	

Program Name	1-year Diploma in Computer Applications	Program Code	
Course Name	Computer Fundamentals	Course Code	21DCA-101
Credits	4	No. of hours/Week	4
Duration of End term examination	03 hrs	Max. marks	Th: 40 IA: 10
<p>Note: Examiner will set nine questions in total. Question one will have 4 parts of 2 marks each from all units and remaining eight questions of 8 marks each to be set by taking two questions from each unit. The students have to attempt five questions in total, first being compulsory and selecting one from each unit.</p>			
<p>Course Objectives:</p> <ol style="list-style-type: none"> 1. Give students an in-depth understanding of why computers are essential components in business, education and society. 2. Introduce the fundamentals of computing devices and reinforce computer vocabulary, particularly with respect to personal use of computer hardware and software. 3. Give student an understanding of operating system and its importance. 4. To enable the student to search web, sending and receiving e-mail. 			
<p>Course Outcomes:</p> <ol style="list-style-type: none"> 1. Student will develop a vocabulary of key terms related to the computer and to software program menus. 2. Student will be able to identify the components of a personal computer system. 3. Student will be able to send email messages (with or without attachments). 4. Student will be able to navigate and search through the internet. 			
<p>Unit 1: Introduction to Computer Introduction, Definition, .Characteristics of computer, Evolution of Computer, Generations of Computer, Classification Of Computers, Applications of Computer, Capabilities and limitations of computer, Computer Architecture, Memory & Its Classification Computer Languages: machine, assembly and high-level languages, generations of computer languages, translator: interpreter and compiler.</p>			
<p>Unit 2: Computer Organization Block diagram of computer systems, Central Processing Unit (CPU), Input Units: Keyboard, Terminals and its types. Pointing Devices, Scanners and its types, Voice Recognition Systems, Vision Input System, Touch Screen, Output Units: Monitors and its types. Printers: Impact Printers and its types. Non Impact Printers and its types, Plotters, types of plotters, Sound cards, Speakers. Storage Fundamentals: Primary Vs Secondary Storage, Data storage & retrieval methods. Primary Storage: RAM ROM, PROM, EPROM, EEPROM. Secondary Storage: Magnetic Tapes, Magnetic Disks. Cartridge tape, hard disks, Floppy disks Optical Disks, Compact Disks, Zip Drive, Flash Drives.</p>			
<p>Unit 3: Operating System and Computer Software Introduction to Operating System , Function of Operating System, Types of Operating System, Batch Processing, Multiprogramming, Multi Tasking, Multiprocessing, Time Sharing, DOS, Windows, Unix/Linux. Introduction to Software, Software and its needs, Types of Software, Program vs. Software, Computer Virus and Antivirus.</p>			
<p>Unit 4: Database systems Basic Concepts – Data, Information, Records and files. Traditional file –based Systems-File Based Approach-Limitations of File Based Approach, Database Approach-Characteristics of Database Approach, advantages and disadvantages of database system, components of database system,</p>			

Database Management System (DBMS), Components of DBMS Environment, , Advantages and Disadvantages of DBMS

References:

1. Goel Anita, Computer fundamentals, Pearson Education.
2. V. Rajaraman, V. Rajaraman, Fundamentals of Computers, PHI

Program Name	1-year Diploma in Computer Applications	Program Code	
Course Name	Windows and MS Word	Course Code	21DCA-102
Credits	4	No. of hours/Week	4
Duration of End term examination	03 hrs	Max. marks	Th: 40 IA: 10
<p>Note: Examiner will set nine questions in total. Question one will have 4 parts of 2 marks each from all units and remaining eight questions of 8 marks each to be set by taking two questions from each unit. The students have to attempt five questions in total, first being compulsory and selecting one from each unit.</p>			
<p>Course Objectives:</p> <ol style="list-style-type: none"> 1. Introduction to windows operating system. 2. Understand the components of office automation 3. Perform operations using MS Word. 4. Understand and discuss about the use of MS Word in daily life 			
<p>Course Outcomes:</p> <ol style="list-style-type: none"> 1. Student will be able to use windows operating system. 2. Student will be able to make a text document. 3. Student will be able to compose, format and edit a ms word document. 4. Student will be able to use concept mail merge. 			
<p>UNIT 1: Introduction to Windows</p> <ol style="list-style-type: none"> 1.0 Introduction <ol style="list-style-type: none"> 1.1 Objective 1.2 Operating System <ol style="list-style-type: none"> 1.2.1 What is Operating System 1.2.2 Types of Operating System 1.3 Operating System and Basics of Windows <ol style="list-style-type: none"> 1.3.1 User Interface 1.3.2 Using Mouse and Moving Icons on the screen 1.3.3 My Computer 1.3.4 Starting an application using start button, minimize, maximize, restore and closing of window 1.3.5 Taskbar 1.3.6 Status Bar 1.3.7 Recycle Bin 1.4 Start Button and Menu selection etc. <ol style="list-style-type: none"> 1.4.1 Running an Application 1.4.2 Windows Explorer 1.4.3 Creating, Deleting and Renaming of files and folders 1.4.4 Opening and closing of different Windows etc. 1.5 Windows Setting <ol style="list-style-type: none"> 1.5.1 Control Panels 1.5.2 Wall Papers and Screen Savers 1.5.3 Setting the date and Sound etc. 1.5.4 Using Help 1.5.5 Display Properties 1.6 Advanced Windows <ol style="list-style-type: none"> 1.6.1 Using Right Mouse Button 1.6.2 Creating short cuts <ol style="list-style-type: none"> 1.6.3 Basics of window set up 1.6.4 Notepad 			

- 1.6.5 Window Accessories
- 1.7 Using Multimedia:
 - 1.7.1 Playing CD's/DVD's
 - 1.7.2 Using Media Player
 - 1.7.3 Sound Recorder

Unit 2: Word Processing

- 2.0 Introduction
 - 2.1 Objectives
 - 2.2 Word Processing Basics
 - 2.2.1 Opening Word Processing Package
 - 2.2.2 Menu Bar
 - 2.2.3 Toolbar
 - 2.2.4 Using Help
 - 2.2.5 Using Icons below Menu Bar
 - 2.3 Opening Documents and Closing Documents
 - 2.3.1 Opening Documents
 - 2.3.2 Save and Save as
 - 2.3.3 Page Setup
 - 2.3.4 Print Preview
 - 2.3.5 Printing of Documents & Other Properties
 - 2.4 Working with text
 - 2.4.1 Selecting text using the mouse
 - 2.4.2 Selecting text using the keyboard
 - 2.4.3 Deleting text
 - 2.4.4 Understanding find and replace
 - 2.4.5 Using go to
 - 2.4.6 Understanding cutting and copying
 - 2.4.7 Understanding font formatting
 - 2.4.8 Understanding font formatting tools
 - 2.4.9 Changing fonts
 - 2.4.10 Changing font size
 - 2.4.11 Increasing and decreasing font size
 - 2.4.12 Making text bold
 - 2.4.13 Italicising text
 - 2.4.14 Underlining text
 - 2.4.15 Highlighting text
 - 2.4.16 Changing text colour
 - 2.4.17 Clearing font formatting
 - 2.5 Working with paragraphs
 - 2.5.1 Understanding paragraph formatting
 - 2.5.2 Understanding text alignment
 - 2.5.3 Changing text alignments
 - 2.5.4 Changing line spacing
 - 2.5.5 Changing paragraph spacing
 - 2.5.6 Indenting paragraphs
 - 2.5.7 Outdenting paragraphs
 - 2.5.8 Adding bullets to existing paragraphs
 - 2.5.9 Starting a numbered list
 - 2.5.10 Applying borders to paragraphs

2.5.11 Using the paragraph dialog box

Unit 3:

3.0 Tables and clip arts

3.1 Table Manipulation

- 3.1.1 Concept of table: Rows, Columns and Cells
- 3.1.2 Draw Table
- 3.1.3 Changing cell Width and Height
- 3.1.4 Alignment of Text in Cell
- 3.1.5 Copying of cell
- 3.1.6 Delete/insertion of row and columns
- 3.1.7 Borders for Table
- 3.1.8 Deleting a table
- 3.1.9 Splitting and merging cells
- 3.1.10 Converting table to text
- 3.1.11 Setting table properties

3.2 Understanding clip art and pictures

- 3.2.1 Inserting clip art
- 3.2.2 Selecting clip art
- 3.2.3 Applying text wrapping styles
- 3.2.4 Positioning clip art
- 3.2.5 Resizing clip art
- 3.2.6 Applying picture styles to clip art
- 3.2.7 Resetting clip art
- 3.2.8 Deleting clip art
- 3.2.9 Inserting a picture
- 3.2.10 Inserting an online picture
- 3.2.11 Resizing a picture
- 3.2.12 Changing the picture
- 3.2.13 Cropping a picture

Unit 4:

4.0 Mail Merge and Printing

4.1 Mail Merge

- 4.1.1 Understanding mail merge
- 4.1.2 Understanding the mail merge process
- 4.1.3 Creating a recipient list
- 4.1.4 Creating the starting document
- 4.1.5 Starting the mail merge wizard
- 4.1.6 Selecting a recipient list
- 4.1.7 Inserting mail merge fields
- 4.1.8 Previewing the merged documents
- 4.1.9 Completing the merge

4.2 Printing

- 4.2.1 Understanding printing

- 4.2.2 Previewing your document
- 4.2.3 Quick printing
- 4.2.4 Selecting a printer
- 4.2.5 Printing the current page
- 4.2.6 Specifying a range of pages
- 4.2.7 Specifying the number of copies

References:

1. BPB's Computer Course Windows 10 with MS Office 2016, BPB publication.
2. Peter Weverka ,Microsoft Office 2016 All-In-One for Dummies

Program Name	1-year Diploma in Computer Applications	Program Code	
Course Name	MS Excel and PowerPoint	Course Code	21DCA-103
Credits	4	No. of hours/Week	4
Duration of End term examination	03 hrs	Max. marks	Th: 40 IA: 10
Note: Examiner will set nine questions in total. Question one will have 4 parts of 2 marks each from all units and remaining eight questions of 8 marks each to be set by taking two questions from each unit. The students have to attempt five questions in total, first being compulsory and selecting one from each unit.			
Course Objectives:			
<ol style="list-style-type: none"> 1. Introduction to MS Excel, PowerPoint. 2. Understand the components of office automation 3. Perform operations using Excel, PowerPoint 4. Understand and discuss about the use of Office Package and internet in daily life 			
Course Outcomes:			
<ol style="list-style-type: none"> 1. Student will be able to Work with Cells and Worksheets. 2. Student will be able to make a PowerPoint presentation. 3. Student will be able to compose, format and edit a ms excel spreadsheet. 4. Student will be able to compose, format and edit a power point presentation. 			
Unit 1: MS Excel			
1.0 Introduction			
1.1 Objectives			
1.2 Elements of Electronics Spread Sheet			
1.2.1 Application/usage of Electronic Spread Sheet			
1.2.2 Opening of Spread Sheet			
1.2.3 Menu bar			
1.2.4 Saving Workbook			
1.2.5 Creation of cells and addressing of cells			
1.2.6 Inserting new rows & Columns, Worksheets			
1.2.7 Editing rows/columns height & width			
1.2.8 Renaming, Deleting and Moving a Worksheet			
1.3 Manipulation of Cells			
1.3.1 Cell Addressing			
1.3.2 Enter texts			
1.3.3 Numbers and Dates			
1.3.4 Cell Height and Width			
1.3.5 Copying of cells etc.			
1.4 Formulas			
1.4.1 Using Formulas			
1.4.2 Using basic functions & formulas a cell			
1.4.3 Sum function			
1.4.4 Average			
1.4.5 Percentage, Other functions.			
1.4.6 Maintaining invoices/budgets			
1.4.7 Totalling of various transactions			
1.4.8 Maintaining daily & monthly sales report			

Unit 2: MS Excel continues

2.0 Functions and Charts

2.1 Functions

- 2.1.1 Data Sorting
- 2.1.2 Using Subtotals
- 2.1.3 Applying filters
- 2.1.4 Understanding functions
- 2.1.5 Using the sum function
- 2.1.6 Summing non-contiguous ranges
- 2.1.7 Calculating an average
- 2.1.8 Finding a maximum value
- 2.1.9 Finding a minimum value

2.2 Chart

- 2.2.1 Understanding the charting process
- 2.2.2 Choosing the right chart
- 2.2.3 Using a recommended chart
- 2.2.4 Creating a new chart from scratch
- 2.2.5 Working with an embedded chart
- 2.2.6 Resizing a chart
- 2.2.7 Repositioning a chart
- 2.2.8 Printing an embedded chart
- 2.2.9 Creating a chart sheet
- 2.2.10 Changing the chart type
- 2.2.11 Changing the chart layout
- 2.2.12 Changing the chart style
- 2.2.13 Printing a chart sheet
- 2.2.14 Embedding a chart into a worksheet
- 2.2.15 Deleting a chart

2.3 Pivot Tables

- 2.3.1 Understanding PivotTables
- 2.3.2 Recommended PivotTables
- 2.3.3 Creating Your Own PivotTable
- 2.3.4 Defining the PivotTable Structure
- 2.3.5 Filtering a PivotTable
- 2.3.6 Clearing a Report Filter
- 2.3.7 Switching PivotTable Fields
- 2.3.8 Formatting a PivotTable

2.4 Spread Sheets for Small Accountings

Unit 3: PowerPoint

3.0 Introduction to PowerPoint

- 3.1.1 Using PowerPoint,
- 3.1.2 starting PowerPoint,
- 3.1.3 creating and opening a presentation,
- 3.1.4 PowerPoint views, moving between slides,
- 3.1.5 saving/closing a presentation, exiting PowerPoint,

3.2 Creating New Slide

- 3.2.1 Creating a new presentation using the auto content wizard and slide layout.
- 3.2.2 Creating a new presentation using different layouts,

- 3.2.3 Applying theme variants
- 3.2.4 Applying slide transitions
- 3.3 Customizing Presentation
 - 3.3.1 changing the text formats
 - 3.3.2 adding numbering, bullets,
 - 3.3.3 aligning text.
 - 3.3.4 Applying wordart to text
 - 3.3.5 Converting text to smartart
- 3.4 Formatting Slides
 - 3.4.1 Using Color Schemes,
 - 3.4.2 background Color and Designs,
 - 3.4.3 Adding Pictures/ Graphics on Slide,
 - 3.4.4 Drawing shapes
 - 3.4.5 Resizing shapes
 - 3.4.6 Editing shapes
- 3.5 Changing Slide Layout
 - 3.5.1 Adding Header and Footer
 - 3.5.2 Understanding slide layouts
 - 3.5.3 changing slide layouts,

Unit 4 : PowerPoint Continues

- 4.0 Charts, animation and slide master
 - 4.1 Charts
 - 4.1.1 Adding charts of different types to slide,
 - 4.1.2 Understanding charts
 - 4.1.3 Inserting a chart using the ribbon
 - 4.1.4 Changing the chart type
 - 4.1.5 Chart elements
 - 4.1.6 Applying a chart style
 - 4.1.7 Understanding the chart format panes
 - 4.1.8 Formatting chart elements
 - 4.1.9 Editing a data series
 - 4.2 Using slide transition:
 - 4.2.1 Understanding animations and transitions
 - 4.2.2 Animating text
 - 4.2.3 Animating objects
 - 4.2.4 Applying multiple effects
 - 4.2.5 Applying motion paths
 - 4.2.6 The animation pane
 - 4.2.7 Setting the timing
 - 4.2.8 Animating smart art graphics
 - 4.2.9 Using slide transitions
 - 4.3 Using Images
 - 4.3.1 Understanding clip art and pictures
 - 4.3.2 Inserting a picture from file
 - 4.3.3 Inserting an online picture
 - 4.3.4 Resizing an image
 - 4.3.5 Positioning an image

- 4.3.6 Inserting clip art
- 4.3.7 Modifying graphics
- 4.3.8 Rotating and flipping clip art
- 4.4 Slide Master View
 - 4.4.1 Understanding slide masters
 - 4.4.2 Viewing the slide master
 - 4.4.3 Changing the master font
 - 4.4.4 Modifying bullets
 - 4.4.5 Inserting an image
 - 4.4.6 Applying slide transitions to the slide master
 - 4.4.7 Inserting slide numbers
 - 4.4.8 Creating custom slide layouts
 - 4.4.9 Modifying slide layouts
- 4.5 Using Page Setup and printing
 - 4.5.1 Understanding printing
 - 4.5.2 Previewing slides
 - 4.5.3 Printing slides
 - 4.5.4 Printing handouts
 - 4.5.5 Printing notes pages
 - 4.5.6 Printing the outline

References:

1. BPB's Computer Course Windows 10 with MS Office 2016, BPB publication.
2. Peter Weverka ,Microsoft Office 2016 All-In-One for Dummies

Program Name	1-year Diploma in Computer Applications	Program Code	
Course Name	MS office and Typing Lab	Course Code	21DCA-104
Credits	2	No. of hours/Week	2
Duration of End term examination	3hrs	Max. marks	Prac: 25 IA: 25
Course Objectives:			
<ol style="list-style-type: none"> 1. To give hands on training to the students to get acquainted in working with windows operating system 2. To give hands on training to the students to get acquainted in working with Ms-Word 3. To give hands on training to the students to get acquainted in working with MS-Excel 4. To give hands on training to the students to get acquainted in working with MS-PowerPoint 			
Course Outcomes:			
<ol style="list-style-type: none"> 1. Student will acquire practical knowledge of working with menus of Windows directory 2. Student will be able to create and edit documents using Ms-Word 3. Student will be able to create and edit spreadsheets using Ms-Excel 4. Student will be able to create and edit slides 			
Students have to perform the following activities in lab :			
Logging into Windows, Folder – Create, Copy, Rename and Delete, Recycle bin – Emptying, Restoring; WordPad: File Creation, Read, Edit lines, paragraph, word wrap, Find, Search, Copy, Cut, Paste, Select Text, Delete, Save as a file			
Open MS Word, Create, Edit, Save Sample Documents like Letter to Centre for Differently Abled, Simple Reports with Paragraphs, Headings and Subheading applying Formatting concepts, Invitation Mailers, Protect Documents, Spell Check, Review and Print (with Paper Layout options, Pages to Print)			
Open MS Excel, Create Sample Spreadsheets like Student Mark sheet, Salary Slip with formatting, Event Schedule with Dates and Time formatting, Staff Attendance Register with sorting and filtering, Sales Report with formula implemented, Spell Check, Review and Print (with Paper Layout options, Pages to Print)			
Open MS Power Point, Create Sample Presentations like Centre for Differently Abled Intro and Activities, Sample Product Marketing, Sales Analysis of a region, Knowledge Sharing presentation on opportunities for Differently Abled in Government, Present all of them as Slideshows, Package them, Print Slides (with Layout Options, Pages to Print)			
Learning Typing and continuous practice.			

Program Name	1-year Diploma in Computer Applications	Program Code	
Course Name	Number System and Basic of C Programming	Course Code	21DCA-201
Credits	4	No. of hours/Week	4
Duration of End term examination	03 hrs	Max. marks	Th: 40 IA: 10
<p>Note: Examiner will set nine questions in total. Question one will have 4 parts of 2 marks each from all units and remaining eight questions of 8 marks each to be set by taking two questions from each unit. The students have to attempt five questions in total, first being compulsory and selecting one from each unit.</p>			
<p>Course Objectives:</p> <ol style="list-style-type: none"> 1. To formulate simple algorithms for arithmetic and logical problems. 2. To translate the algorithms to programs (in C language). 3. To test and execute the programs and correct syntax and logical errors. 4. To implement conditional ranching, iteration and recursion. 			
<p>Course Outcomes:</p> <ol style="list-style-type: none"> 1. To write algorithms and to draw flowcharts for solving problems. 2. To convert the algorithms/flowcharts to C programs. 3. To code and test a given logic in C programming language. 4. To use arrays, pointers, strings and structures to write C programs. 			
<p>Unit 1: Binary Number System Number System: Binary, Octal, Decimal, Hexadecimal and their inter conversion methods. Operations on number systems: Addition, Subtraction, Complement etc.</p>			
<p>Unit 2: Algorithm and C Programming Introduction to Programming: Idea of Algorithm: steps to solve logical and numerical problems. Representation of Algorithm: Flowchart/Pseudocode with examples. C Programming: Keywords, variables, data types, header files, basic input and output functions and statements, Compilation, Syntax and Logical Errors in compilation, object and executable code, Arithmetic expressions and precedence. .</p>			
<p>Unit 3: Control Structure Conditional statements, branching and Loops, Writing and evaluation of conditionals and consequent branching, Iteration and loops. .</p>			
<p>Unit 4: Structure, Union, String, Array and Function Introduction to Structure, Union, Strings, Operation on Strings, Arrays (1-D, 2-D), Character Arrays, Functions (including using built in libraries), Parameter passing in functions, Call by Value, Call by Reference.</p>			
<p>References: Ajay Mittal, Programming in C, 'A Practical Approach', Pearson Education. Byron Gottfried, Schaum's Outline of Programming with C, McGraw-Hill. E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill. Yashavant Kanetkar, Let Us C, BPB Publication.</p>			

Program Name	1-year Diploma in Computer Applications	Program Code	
Course Name	Internet Fundamentals	Course Code	21DCA-202
Credits	4	No. of hours/Week	4
Duration of End term examination	03 hrs	Max. marks	Th: 40 IA: 10

Note: Examiner will set nine questions in total. Question one will have 4 parts of 2 marks each from all units and remaining eight questions of 8 marks each to be set by taking two questions from each unit. The students have to attempt five questions in total, first being compulsory and selecting one from each unit.

Course Objectives:

1. Give students an in-depth understanding of what is internet and its various components and their applications.
2. Introduce the fundamentals of email and its various aspects, particularly with respect to personal use of creating an email and using it for personal and professional use.
3. Give student an understanding of Web, search engines and their applications.
4. To enable the student to understand basic of creating a web page and its various components.

Course Outcomes:

1. Student will develop a vocabulary of key terms related to the internet and its various applications.
2. Student will be able to identify the various aspects of creating and using email for communication.
3. Student will be able to navigate and search through the internet and use it effectively.
4. Student will be able to make their own web page.

Unit 1: Internet

Introduction, Basic of Computer networks: LAN, MAN, WAN, Internet: Concept of Internet, Advantages of Internet, Security issues in using internet. Application of Internet in various fields: Scientific, Business, Research, Sports, Medicine & Health Care, Engineering, Teaching.

Unit 2: E-mail, Basic of Electronic Mail, creating new e-mail account, Email addressing, Mailbox: Inbox and outbox, Sending & checking mails, Creating an E-mail, Viewing an E-mail, Sending an Email, replying to an E-mail message, forwarding an e-mail message, Sorting and searching emails, Sending soft copy as attachment.

Unit 3: Web

World Wide Web (WWW), Web Browser, Search Engine and Surfing the Internet, URL address, searching over the Web, Moving Around in a web-site, Printing and saving web pages, Uploading and Downloading

Unit 4: HTML

History of HTML, Structure of HTML Document: Text Basics, Images and Multimedia, Links and webs, Creating Tables, Lists, designing web pages, Creating a Homepage, Publishing a web page, Making web page resume.

References:

1. Fundamentals of the Internet and the World Wide Web, Raymond Greenlaw and Ellen Hepp, TMH
2. Internet Literacy by Dr. Fred T. Hofstetter. McGraw-Hill

Program Name	1-year Diploma in Computer Applications	Program Code	
Course Name	Data Communication	Course Code	21DCA-203
Credits	4	No. of hours/Week	4
Duration of End term examination	03 hrs	Max. marks	Th: 40 IA: 10
<p>Note: Examiner will set nine questions in total. Question one will have 4 parts of 2 marks each from all units and remaining eight questions of 8 marks each to be set by taking two questions from each unit. The students have to attempt five questions in total, first being compulsory and selecting one from each unit.</p>			
<p>Course Objectives:</p> <ol style="list-style-type: none"> 1. To Build an understanding of the fundamental concepts of computer networking and familiarizing the student with the basic taxonomy and terminology of the computer networking and data communication. 2. To outline various models, topologies and devices of Computer Networks. 3. To explain the functions of various layers in Network Reference Model. 4. To apply different network concepts in various network communication protocols. 			
<p>Course Outcomes:</p> <ol style="list-style-type: none"> 1. Independently understand basic computer network technology. 2. Understand and explain Data Communications System and its components. 3. Identify the different types of network topologies and protocols. 4. Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer. 5. Identify the different types of network devices and their functions within a network 			
<p>Unit 1: Introduction to Data Communication: Need, components, Data representations communication model, Characteristics of an effective Communication system, Transmission modes: Simplex, Half Duplex and Full Duplex. Serial and parallel transmission. Unicasting, Multicasting, Broadcasting, MULTIPLEXING: FDM, WDM, TDM, packet switching and circuit switching. Transmission Media: Copper cable, Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable. Introduction to Computer Network: applications, benefits and problems, Types of Networks: PAN, LAN, MAN and WAN.</p>			
<p>Unit 2: Network Topologies: Introduction to Computer Network Topologies: Mesh Topology, Bus Topology, Star Topology, Ring Topology, Tree Topology, Hybrid Topology, Irregular – Topology.</p> <p>OSI and TCP/IP Model: Layering architecture of networks, OSI model, Functions of each layer, Services and Protocols of each layer</p>			
<p>Unit 3: Ethernet: Features and types of LANs, Types of Ethernets- Thicknet, Thinnet, Fast Ethernet and Gigabit and 10G Ethernet etc. Concept of Carrier Sense Multiple Access (CSMA)/CD in Ethernet, Network addressing: Physical addressing, logical addressing and port addressing, MAC addressing in Ethernet, IP V4 addressing: concept of subnet, network and host address, IP address Classes- A, B, C, D and E classes. Introduction to classless addressing</p>			
<p>Unit 4: LAN interconnecting devices: Repeater, Hubs, Switches, Bridges, Routers, Gateways. Network Security: Firewalls, security goals, types of attack, Introduction to cryptography, Types of ciphers: symmetric and asymmetric key ciphers.</p>			
<p>References:</p> <ol style="list-style-type: none"> 1. Data Communication and Networking, 4th Edition, Behrouz A. Forouzan, McGraw- Hill. 2. Data and Computer Communication, 8th Edition, William Stallings, Pearson Prentice Hall India. 			

Program Name	1-year Diploma in Computer Applications	Program Code	
Course Name	Internet Lab	Course Code	21DCA-204
Credits	2	No. of hours/Week	2
Duration of End term examination	3hrs	Max. marks	Prac: 25 IA: 25
Course Objectives:			
<ol style="list-style-type: none"> 1. To give hands on training to the students to get acquainted in working with Internet. 2. To give hands on training to the students to get acquainted in working with e-mail services. 3. To give hands on training to the students to get acquainted with searching the web. 4. To give hands on training to the students to get acquainted with HTML. 			
Course Outcomes:			
<ol style="list-style-type: none"> 1. Student will acquire practical knowledge of working with e-mail services 2. Student will be able to learn different tags of HTML. 3. Student will be able to create a simple web page using HTML. 4. Student will be able to search, surf the web. 			
Students have to perform the following activities in lab :			
Setting a connection to the internet, web browsing and searching web pages.			
Learn different tags of HTML			
Create a simple web page.			
Learning Typing and continuous practice.			