

**DEPARTMENT OF COMPUTER SCIENCE**

**COURSE CURRICULUM & MARKING SCHEME**

**PGDCA**  
**Semester - I**  
**SESSION : 2022-23**



ESTD: 1958

**GOVT. V.Y.T. PG AUTONOMOUS COLLEGE,**  
**DURG, 491001 (C.G.)**

(Former Name – Govt. Arts & Science College, Durg)

NAAC Accredited Grade A<sup>+</sup>, College with CPE - Phase III (UGC), STAR COLLEGE (DBT)

Phone : 0788-2212030

Website - [www.govtsciencecollegedurg.ac.in](http://www.govtsciencecollegedurg.ac.in), Email – [autonomousdurg2013@gmail.com](mailto:autonomousdurg2013@gmail.com)

**Govt. V.Y.T. PG Autonomous College Durg (CG)**



**SCHEME OF EXAMINATION  
&  
SYLLABUS**

**of**

**Choice Based Credit System (CBCS)  
For**

**POST GRADUATE DIPLOMA IN COMPUTER  
APPLICATION (PGDCA)**

**Department of Computer Science**

**Session – 2022-23**

**(Approved by Board of studies)**

**DEPARTMENT OF COMPUTER SCIENCE**  
**GOVT. V.Y.T. PG. AUTONOMOUS COLLEGE DURG**  
**POST GRADUATE DIPLOMA IN COMPUTER APPLICATION (P. G. D.C.A.)**  
**[DURATION – ONE YEAR – FULL TIME]**

The duration of the course shall be one year consisting of two semesters. There shall be three theories and two practical courses in the each semester.

**Approved syllabus for PGDCA by the members of Board of Studies for the Sessions  
 2022-23**

The syllabus with the paper combinations is as under

**FIRST SEMESTER**

- PDC-101 : Fundamentals of Computers.  
 PDC-102 : Office Automation and Tally.  
 PDC-103 : Programming in C  
 PDC-104 : Practical based on PDC-102.  
 PDC-105 : Practical based on PDC-103.

**Second Semester**

- PDC-106 : Elective –I-Programming in VB .Net  
 PDC-106 : Elective –II- Programming in Python
- PDC-107 : Database Management Systems.  
 PDC-108 : Internet and Web Technology.  
 PDC-109 : Practical based on PDC-106, PDC-107 and PDC-108  
 PDC-110 : Project

The syllabus for PGDCA is hereby approved for the sessions 2022-23.

**Name and Signatures**

Name and Signatures	Departmental members
V.C. Nominee .....	1. HOD-Mr. Durgesh Kumar Kotangle
Subject Expert ..... (D.P. Rao)	.....
Subject Expert.....	2. Mr. Dileep Kumar Sahu.....
Alumni(member).....	.....
Prof. from other Dept. of Sc. Faculty.....	3. Mrs. Latika Tamrakar ..... 25/7/22
Specialist from Industry .....	


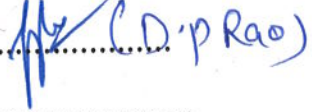
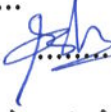


**Syllabus and Marking Scheme for PGDCA I<sup>ST</sup> SEM  
Session 2022-23**

Paper No.	Subject Code	Title of the Paper	Marks Allotted in Theory	
			Max	Min
I	PDC-101	FUNDAMENTALS OF COMPUTERS	100	20
II	PDC-102	OFFICE AUTOMATION & TALLY	100	20
III	PDC-103	PROGRAMMING IN "C"	100	20
IV	PDC-104	PRACTICAL BASED ON PDC-102	100	20
V	PDC-105	PRACTICAL BASED ON PDC-103	100	20
		<b>Total</b>	<b>500</b>	

1. Theory papers - 300  
2. Practical - 200

**Total Marks - 500**

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Subject Expert.....		3. Mrs. Latika Tamrakar	 .....
Alumni(member).....			
Prof. from other Dept. of Sc. Faculty .....			
Specialist from Industry .....			

**GOVT.V.Y.T.P.G. AUTONOMOUS COLLEGE, DURG (C.G.)**  
**SYLLABUS FOR SESSION: (2022-23)**  
**PGDCA – FIRST SEMESTER**  
**PDC-101**  
**FUNDAMENTALS OF COMPUTER**

Max Marks: 100

Min Marks: 20

**NOTE: - The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not scientific calculator.**

**Course Objective:** Introduce the fundamentals of computing devices and reinforce computer vocabulary, particularly with respect to personal use of computer hardware and software, the Internet, networking and mobile computing.

**Course Outcome:** After completion of this course student will be able to:

1. Understand the fundamental hardware components that make up a computer's hardware and the role of each of these components.
2. Understand the difference between Input devices and Output devices.
3. Understand the basic components and storage devices of computer
4. Familiar with various types of Programming language and language translators.
5. Familiar with various operating system.

**UNIT-I Introduction to Computers**

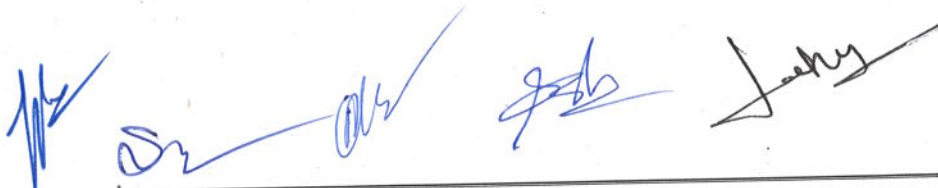
**Computer system:** characteristics and capabilities. Computer Hardware and Software: Block Diagram of a Computer, Different Data Processing: Data, Data Processing System, Storing Data, Processing Data. Types of Computers: Analogue, Digital, Hybrid, General and Special Purpose Computers. Generation of Computers.

**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, Hardcopy Output Devices, Impact Printers, Non-Impact Printers, Plotters, Computer output Microfilm/Microfiche (COM) systems, Softcopy Output Devices, Cathode Ray Tube, Flat Screen Technologies, Projectors, Speakers.

**UNIT - III Basic Components & 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 & 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.






### UNIT – V: Operating System and Linux

Introduction, Uses of OS, Functions of OS, Booting process, Types of Reboot, Booting from different OS, Types of OS, DOS, Windows, Linux Open source Software concept and evolution of Linux; Features of Multi-User Operating System; Structure of Linux OS; Security Features of Linux, File System, Directory Structure and related commands. Linux Editors & editor commands, Linux commands cd, md, rm, mv, cp, ls, cat, find, grep.

#### Books Recommended:

1. Computer Fundamentals, P. K. Sinha, BPB Publications, Sixth Edition.
2. Introduction to Information Technology, V. Rajaraman, PHI, Second Edition.
3. Operating System Concepts, Silberrhartz, Galvin and Gagne, Wiley India Edition
4. Unix Concepts and Applications, Sumitabha Das, McGraw hill

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**SYLLABUS FOR SESSION: (2022-23)**  
**PGDCA – FIRST SEMESTER**  
**PDC-102**  
**OFFICE AUTOMATION AND TALLY**

**Max Marks: 100**

**Min Marks: 20**

**NOTE: - The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not scientific calculator.**

Course Objective: This course is designed digitally create, store, manipulate, and relay office information and data, needed for accomplishing basic tasks and goals. Office automation makes it possible for business organizations to improve their productivity and recognize easier ways to do business in profits. This course is also designed to impart knowledge regarding concepts of Financial Accounting using Tally.

Course Outcome: After completion of this course student will be able to:

1. Understand creating and formatting basic documents in word processor software with their properties.
2. Understand the creating and using formulas and charts in worksheets
3. Create presentations and can apply various animations on it Understand the creating and using formulas and charts in worksheets.
4. Design database and execute various structure query languages on it to retrieve data from database.
5. Student will develop computer skills of recording financial transactions, preparation of annual accounts and reports using Tally.

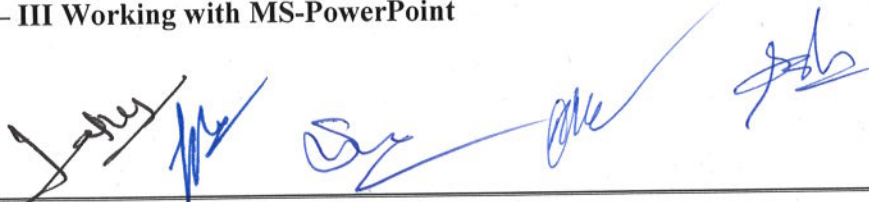
**UNIT - I Using Office with MS-Word**

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 envelopes 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 Working with 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 Working with 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 Working with MS-Access and MySQL Server

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 MS-Excel and MS-Word. **Datasheet Tab:** Relationships, Fields and columns options, Data type and formatting options. Introduction to MySQL Server. Creating Database and Database Tables in MySQL Server.


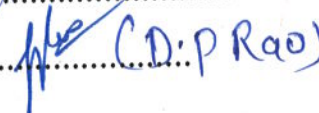

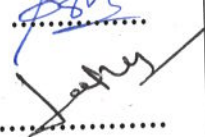

#### UNIT – V Tally

Setting up Ledger & Groups. Study of recording of transactions in the 'Voucher'. (According to Golden rules). Study of 'Final A/C preparation & displaying in different mode/format'. Study of alteration & Deletion of ledger/Groups. Study of cash & fund flow, day book, sales register, purchase register, bills receivable/Payable etc. Study of data security & backing up data. Outline of entry for Income Tax, ED, VAT, ST/CST, PF, Gratuity, Bonus, Loans & Depreciation etc.

#### Books Recommended:

1. Office 2007, A Visual Approach to Learning Computer Skills, Rutkosky,Seguin,BPB Publications.
2. Tally With Office Automation Paperback, Priya Bajaj Dr.S.B. Kishor, Vijaylaxmi D. Hiremath, Gurbir Kaur Khalsa, DAS GANU PRAKASHAN.
3. Computer Basics with Office Automation, Archana Kumar, PublisherDreamtech Press
4. www.mysql.com

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**GOVT.V.Y.T. P.G. AUTONOMOUS COLLEGE, DURG (C.G.)**  
**SYLLABUS FOR SESSION: (2022-23)**  
**PGDCA – FIRST SEMESTER**  
**PDC-103**  
**PROGRAMMING IN C**

**Max Marks: 100**

**Min Marks: 20**

**NOTE: - The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not scientific calculator.**

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Course Objective: The course is designed to provide complete knowledge of C language. Students will be able to develop logics which will help them to create programs, applications in C. Also by learning the basic programming constructs they can easily switch over to any other language in future.

Course Outcome: After completion of this course student will be able to:

- Understand the basic terminology used in computer programming with different data types, operators and its types, operator precedence and associativity in C language.
- Design programs involving decision structures, loops and functions.
- Explain the difference between call by value and call by reference.
- Understand the dynamics memory by the use of pointers.
- Use different data structures and create/update basic data files and Apply logical skills to programming in a variety of languages

**UNIT – I: Introduction:**

Introduction Character set, Identifiers and Keywords, Variables, Displaying variables, Reading Variables, Character and Character String, Qualifiers, Type define Statements, Value initialized variables, Constants, Constant Qualifier, Operators and Expressions, Operator Precedence and Associativity, Basic input output: Single Character I/O, General Outputs, Types of Characters in format string, Scanf with specifiers, Searchset Arrangements and Suppression Character, Format Specifiers for scanf.

**UNIT – II: Control Structures & Functions:**

Control Structure: if-statement, if-else statement, multiple decisions, nested if statements, switch statement, for-loop, while-loop, do-while loop, break statement, continue statement, goto statement.

Functions: The main function, functions accepting more than one parameter, User defined and library functions, Concept associatively with functions, function parameter, Return value, recursion comparisons of Iteration and recursion variable length argument list.

**UNIT – III: Arrays & Pointes:**

Scope and Extent, Arrays, Strings, Multidimensional Arrays, Strings, Array of Strings, Function in String, Pointers: Definition and use of pointer, address operator, pointer variable, referencing pointer, void pointers, pointer arithmetic, pointer to pointer, pointer and arrays, passing arrays to functions, pointer and functions, accessing array inside



functions, pointers and two dimensional arrays, array of pointers, pointers constants, pointer and strings.

**UNIT – IV: Structure and Union:**

Declaring and using Structure, Structure initialization, Structure within Structure, Operations on Structures, Array of Structure, Array within Structure, Creating user defined data type, pointer to Structure and function. Union, difference between Union and Structure, Operations on Union, Scope of Union.

**UNIT – V: Dynamic Memory Allocation and File Handling:**

**Dynamic Memory Allocation:** Library functions for Dynamic memory allocation, Dynamic Multi-Dimensional arrays.

**File Handling:** - Introduction, Structure, File handling, Functions file types, Un-buffered and buffered file, Error handling.

**BOOKS RECOMMENDED: -**

1. PROGRAMMING IN ANSI C:- E BALAGURUSAMI, TATAMCGRAW -HILL, THIRD EDITION.
2. LET US C – YASHWANTKANETKAR INFINITY SCIENCE PRESS, EIGHTH EDITION.
3. MASTERING IN C–K R VENUGOPAL, TATAMCGRAW-HILL
3. THE C PROGRAMMING LANGUAGE –BRIAN W. KEMIGHAM, DENNIS M. RITCHE, PRENTICE HALL, SECOND EDITION
4. APPLICATION PROGRAMMING IN ANSI C - R. JOHNSON-BAUGH, MARTIN KALIN, MACMILLAN SECOND EDITION.
5. THE SPIRIT OF C - MULLISH COOPER, JAICO PUBLISHING HOUSE
6. HOW TO SOLVE IT BY COMPUTERS - R.G.DROMEY, PRENTICE HALL OF INDIA.

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**SYLLABUS FOR SESSION: (2022-23)**  
**PGDCA – FIRST SEMESTER**  
**PDC-104 (Practical based on PGDCA-102)**

**1. Scheme of Examination: -**

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

Program 1 (MS-Office)	-	15
Program 2 (MS-Office)	-	15
Program 3 (MS-Office)	-	15
Program 4 (Tally)	-	15
Viva-Voice	-	20
[Practical Copy + Internal Record]	-	20
Total	-	<b>100</b>

2 In every program there should be comment for each coded line or block of code.

3 Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.

4 All the following programs or a similar type of programs should be prepared.

**Course Objective:** To provide hands-on use of Microsoft Office applications Word, Excel, Access and PowerPoint and to impart knowledge regarding concepts of Financial Accounting Tally is an accounting package which is used for learning to maintain accounts

**Course Outcomes:**

1. Understand creating and formatting basic documents in word processor software with their properties.
2. Understand the creating and using formulas and charts in worksheets
3. Able to create presentations and can apply various animations on it.
4. Understand the creating and using structure query language queries in database.
5. Student will develop computer skills of recording financial transactions, preparation of annual accounts and reports using Tally.

**List of Practical**

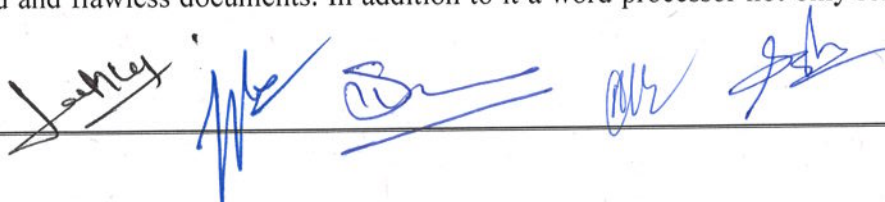
**MS- WORD**

**File New, Open, Save, Cut, Copy, Paste, Drag Drop, Bullets and Numbering, Undo, Redo, Find, Replace, Paragraph Formatting, Character Formatting and Page Formatting.**

1. 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 remote all the



limitations 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 typewriters (MIST) were launched by IBM (International Business Machines).

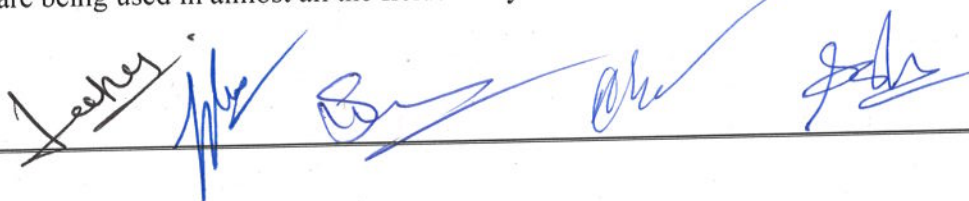
- (i) Insert the following text after the first paragraph  
The main components of a word processing system are listed below:
  - a. Computer
  - b. Printer
  - c. A word processing software
- (ii) Save the document as Word1.doc
- (iii) Move the second paragraph to the end of the document. Using drag & drop.
- (iv) Move the second paragraph in the end of the document using cut, paste operations.
- (v) Undo the above actions.
- (vi) Now use Redo actions
- (vii) Go to the End of the document ( in one step)
- (viii) Go to the Beginning of document ( in one step)
- (ix) Insert page break before the third paragraph.
- (x) Search the word "computer: in your document with options Match case, find whole words only.
- (xi) Replace the word "typewriters" with "word processor"
- (xii) Undo the above action
- (xiii) Remove All page breaks from your document
- (xiv) Change the magnification of your document to different percentages using zoom features.
- (xv) Format the above written paragraphs and give the options as follows:
  - Alignment justified
  - Indentation: left 0.2 right:0.2
  - Spacing: before 6 pt. 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
  - a. Left margin:0.5, right margin: 0.5
  - b. Top margin:1.5, bottom margin:0.5
  - c. Gutter Margin: 1 indentation: left 0.2 right:0.2
  - d. Header Margin:0.5
- (xix) Format the each occurrence of group of words 'Word Processor' as bold, italic, under line and small caps using find and replace with formatting options.
- (xx) Align the heading to Center and make it bold, underlined and italicized.

### **File New, Open, Save, Find, Replace, Paragraph Formatting, Character Formatting and Page Formatting.**

2. Type the text as show below and perform the tasks as directed:

Computers

COMPUTER is an electronic device that processes data 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 programs and Expert Systems.

THE IMPACT OF COMPUTERS ON PEOPLE

The Positive Impact

The Potential Dangers

THE IMPACT OF COMPUTERS ON ORGANIZATIONS

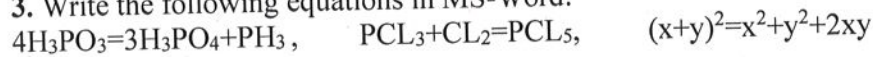
The information Processing Industry

The Positive impact on Using Organizations

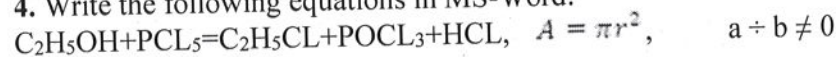
The Potential Dangers for Using Organizations

1. Search for the word 'Computer' in the entire document. All the occurrences of the given word are to be searched irrespective of the case.
2. In the above question note that word also searches 'computerization and 'computerisations'. Now make sure that this time Word searches only for the word 'computer' in the entire document.
3. Change the entire uppercase letter to lowercase.
4. Give a heading to the above written text 'COMPUTERS IN TODAY'S WORLD'
5. Centre aligns the Heading text Computer that appears in first line.
6. Apply outside border to entire document.
7. Apply outside border to the just heading text.
8. 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 "  
Orientation: portrait
9. Give a header 'Creations' and footer 'The school of computing'. The footer should also consist of page no's.
10. Give appropriate commands for giving different header and footers for first page and odd & even pages.
11. Save and close the document.

3. Write the following equations in MS-Word:



4. Write the following equations in MS-Word:



5. Write the following in MS-Word:

1. Preheat the oven to 220°C.
2. Copyright ©
3. Registered ®
4. Trademark ™

6. Create the following table in MS-Word:

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

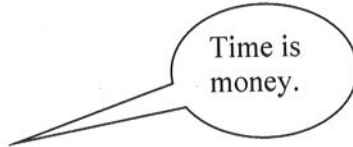
*[Handwritten signatures and marks]*

7. 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 code is like measuring aircraft building progress by weight.*

--Bill Gates

8. Create the following:



9. Create the following:



10. Create the following table in MS-Word:

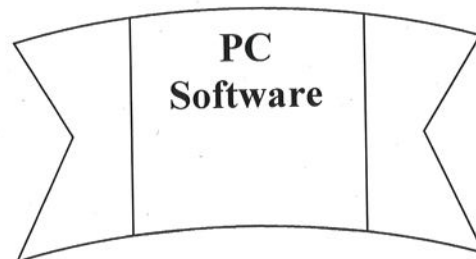
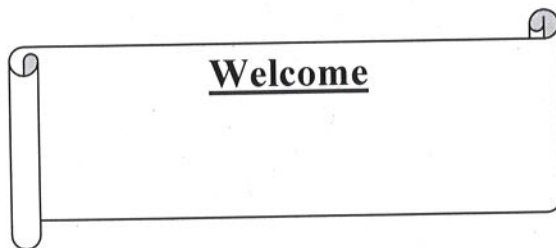
**Admission 2021-2022**

Course	OC	OB	MBC	SC/ST	Total
Computer Science	9	18	5	5	37
Commerce	14	25	6	5	50
Mathematics	12	20	4	4	40

11. Create Table as shown

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

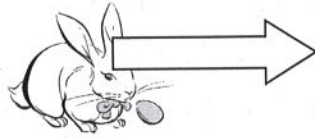
12. Insert the following in MS-Word.



*Handwritten signatures in blue ink at the bottom of the page.*

13. Insert the following in MS-Word.

**Rabbit**



14. Write the following in MS-Word.

- This is sentencecase.
- this is lowercase.
- THIS IS UPPERCASE.
- This Is Capitalise Each Word.
- tHIS IS tOGGLEcASE.

15. Create the following list in MS-Word:

1. Actors

1. Bruce Willis
2. Gerard Butler
3. Vin Diesel

2. Actress

1. Julia Roberts
2. Angelina Jolie
3. Kate Winslet
4. Cameron Diaz

16. Write the following in MS-Word:

1. Cricket Players

3. Batsman

1. Sachin Tendulkar
2. Rahul Dravid
3. Virendra Sehwag

4. Bowler

*Janey* *pl* *8* *ak* *gfb*

- a. Kumble
- b. Zaheer Khan
- c. Balaji

5. Spinner

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

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

18. Create labels 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)

Today's date			Pay Rate :
Worker's Name	Hired On	days Worked	Gross Wages
Kushagra	3-Mar-07		
Pradeep	4-Mar-07		
Puneet	5-Mar-07		
Rajeev	6-Mar-07		

(I) Calculate days work 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 (1997)	Bonus (Rs)	Total Salary (1998)	% (Increase)
Shirome	5000	10	450		1200		
Somya	9000	15	800		200		
Tanya	7000	12	900		1800		

- Calculate the total salary as sum of Basic salary, HRA ,DA, for each employee for 1997
- Calculate total salary for year 1998 as sum of salary of 1997 and bonus
- Calculate % increase in salary from 1997 to 1998

*Handwritten signatures and marks at the bottom of the page.*



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	Meenu	3-Mar-95	5000		
E002	Manoj	4-Mar-06	4000		
E003	Preeti	3-Mar-95	4800		
E004	Sumita	6-Mar-07	7500		

- i. allow bonus 8000 to employee having service >2 year other wise allow bonus 3000
- ii. find net salary as sum of bonus and salary

4. create the worksheet as follows

Roll No	Name	English	Maths	Total	Average	Division
101	Kushagra	95	99			
102	Ajay	92	95			
103	Vijay	70	69			

- i. find Total of two subject for each student
- ii. find average of two subject for each student
- iii. find class 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 student 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 underline

Class Average			
---------------	--	--	--

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

2. create bar chart with given data

	2001	2002	2003
Tea	19	23	25
Coffee	22	24	22
Sugar	45	40	45

- (I) Provide heading production detail
- (II) Provide z axis title; lacks metric tone
- (III) Provide x axis title year



3. 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

1. Suppose a database exists in ms-access you are required to import the data. How will you?

11. Create a table using 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  
Interest 500

**MS-Access**

Q.1. Create the following table in MS-Access:

Field Name	Data Type	Description
ContactID	AutoNumber	Primary Key
ContactType	Text 50	Type of contact (Wholesale, dealer, other)
Name	Text 50	Contact's first name
Company	Text 50	The Contact's employer
Address	Text 50	Contact's address
City	Text 50	Contact's city
State	Text 50	Contact's state
ZipCode	Text 50	Contact's zip code
Phone	Text 50	Contact's phone
Fax	Text 50	Contact's fax
E-Mail	Text 100	Contact's e-mail address
WebSite	Text 100	Contact's Web address
LastSalesDate	Date/Time	The most recent date the contact purchased something
DiscountPercent	Number	The customary discount provided to the customer
Notes	Memo	Notes and observations regarding this customer
Active	Yes/No	Whether the customer is still buying or selling products

Q.2. Create the following tables in MS-Access with the referential integrity-foreign key:

**1. tblProducts**

**Primary Key - ProductID**

ProductID	Description	Category	Quantity	Cost	RetailPrice	ProductNumber	SalePrice	Taxable

**2. tblSalesLineItems**

**Primary Key - SalesLineItemID**

SalesLineItemID	InvoiceNumber	ProductID	ProductNumber	Quantity	Description	Price	Discount

**3. tblSales**

**Primary Key - InvoiceNumber**

InvoiceNumber	SaleDate	InvoiceDate	Buyer	PaymentMethod	TaxLocation	TaxRate

**MS PowerPoint**

Q 1 Create a PPT of Atleast 10 Slides with one slide for comparison, one slide displaying a chart with the table.


Q 2 Create a PPT presentation use rehearse timing for the slide show

Q 3 Create PPT presentation slide import sound and video clips.

Q 4 Create PPT presentation with hyperlinking.

Q 5 Create PPT presentation and apply themes and transitions.

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**GOVT.V.Y.T. P.G. AUTONOMOUS COLLEGE, DURG (C.G.)**  
**SYLLABUS FOR SESSION: (2022-23)**  
**PGDCA – FIRST SEMESTER**  
**PDC-105 (Practical based on PGDCA-103)**

**1 Scheme of Practical Examination:-**

Practical examination will be of 3 hours duration. All programs should be with flowchart & algorithms. The distribution of practical marks is as follows and

Programme 1 (with flowchart & algorithms)	-	20
Programme 2 (with flowchart & algorithms)	-	20
Programme 3 (with flowchart & algorithms)	-	20
Viva-Voice	-	25
[Practical Copy + Internal Record]	-	15

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Total	-	<b>100</b>
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- 2 Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.
- 3 In every program there should be comment for each coded line or block of code.
- 4 All the programs or a similar type of programs should be prepared as per the practical list.

**Course Objective:**

1. To expose different features of C language and implement them.
2. To learn the fundamental concepts of four Divisions.
3. To understand Input and Output Statements.
4. To develop programs relevant to business applications.

**Course Outcomes:**

1. Design programs using control statements and operators of C- language.
2. Understand and apply the pointers, memory allocation techniques and use of files for dealing with variety of problems.
3. Design graphics programs using C language.

**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

- Write program to print all combination of 1 2 3.
- Write program to generate following pattern

a) \* \* \* \* \*

\* \* \* \*

\* \* \*

\*\*

\*

c) \*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

b) 1

2 3

4 5 6

7 8 9 10

d) 1

2 1 2

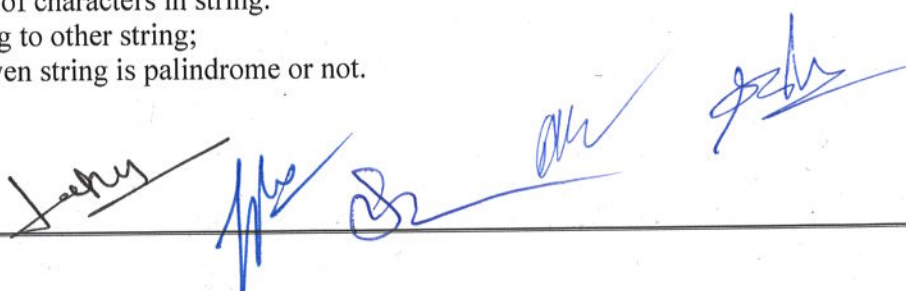
3 2 1 2 3

4 3 2 1 2 3 4

- Write main function using switch...case, if..else and loops which when called asks pattern type; if user enters 11 then first pattern is generated using for loop. If user enters 12 then first pattern is generated using while loop. If user enters 13 then first pattern is generated using do-while loop. If user enters 21 then a second pattern is generated using for loop and so on.
- Write program to display number 1 to 10 in octal, decimal and hexadecimal system.
- Write program to display number from one number system to another number system. The program must ask for the number system in which you will input integer value then the program must ask the number system in which you will want output of the input number after that you have to input the number in specified number system and program will give the output according to number system for output you mentioned.
- Write a program to perform following tasks using switch...case, loops, and conditional operator (as and when necessary).
  - Find factorial of a number
  - Print Fibonacci series up to n terms and its sum.
  - Print sin series up to n terms and its sum.
  - Print exponential series up to n terms and its sum.
  - Print prime numbers up n terms.
  - Print whether a given year is leap or not.
- Write program no. 6 but use library function to perform above tasks.

## ARRAY

- Create a single program to perform following tasks using switch, if..else, loop and single dimension character array without using library function:
  - To reverse the string.
  - To count the number of characters in string.
  - To copy the one string to other string;
  - 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.
- f) To arrange the alphabets of a string in ascending order.
10. Create a single program to perform following tasks using switch, if..else, loop and single dimension integer array:
- a) Sort the elements.
  - c) Search for presence of particular value in array element using linear search.
  - d) Search for presence of particular value in array element using binary search.
11. 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.
12. 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) Subtraction of two matrix.
  - c) Multiplication of two matrix.
  - d) Inverse of matrix.
  - e) Transpose of matrix.
  - f) Sum of diagonal elements
13. 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 largest string.
  - c) Finding the smallest string.
  - c) Searching for presence of a string in array.

#### FUNCTIONS

14. Write program using the function power (a, b) to calculate the value of a raised to b.
15. Write program to demonstrate difference between static and auto variable.
16. Write program to demonstrate difference between local and global variable.
17. 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.
  - c) Print Sin series up to n terms and its sum.
  - d) Print exponential series up to n terms and its sum.
18. 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.



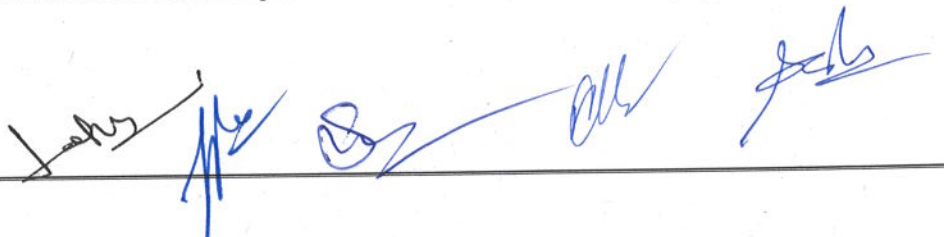
- c) Print Sin series up to n terms and its sum.
  - d) Print exponential series up to n terms and its sum.
  - e) Print natural series up to n terms and its sum
19. Write a function to accept 10 characters and display whether each input character is digit, uppercase letter or lower case letter.

### Array & Function

20. 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) Subtraction of two matrix.
  - c) Multiplication of two matrix.
  - d) Inverse of matrix.
  - e) Transpose of matrix.
21. 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 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, consonant in each word of a sentence and no, of punctuations in sentence.
22. Create a single program to perform following tasks using switch, if..else, loop, function and single dimension integer array:
- a) Sort the elements.
  - b) Find largest element and smallest element.
  - c) Search for presence of particular value in array element using linear search.
  - d) Search for presence of particular value in array element using binary search.
23. Create a single program to perform following tasks using switch, if..else, loop, function and double dimension character array of size 5x40:
- a) Sorting of string
  - b) Finding the largest string, lexicographically.
  - c) Finding the smallest string, lexicographically.
  - c) Searching for presence of string in array.

### STRUCTURE & UNION

24. 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.

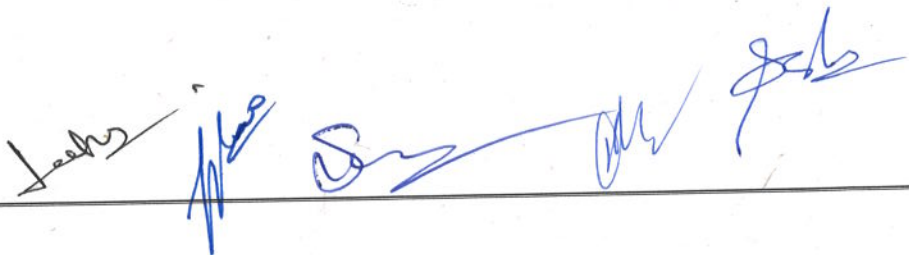


25. Create a structure Date with data member's dd, mm, yy (to store date). Create another structure Employee with data members to hold name of employee, employee id and date of joining (date of joining will be hold by variable of structure Date which appears as data member in Employee Structure). Store data of an employee and print the same.
26. 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.
27. Write program to create structure complex having data members to store real and imaginary part. Provide following facilities:
- Add two complex nos. using structure variables.
  - Subtract two complex nos. using structure variables.
  - Multiply two complex nos. using structure variables.
  - Divide two complex nos. structure variables.

Use structure as argument to function and function returning structure.

#### POINTER

28. Define union Emp having data members:-one integer, one float and one single dimension character array. Declare a union variable in main and test the union variable.
29. Define an enum Days\_of\_Week members of which will be days of week. Declare an enum variable in main and test it.
30. Write a program of swapping two numbers and demonstrates call by value and call by reference.
31. Write program to sort strings using pointer exchange.
32. Write a program in c using pointer and function to receive a string and a character as argument and return the no. of occurrences of this character in the string.
33. Create a program having pointer to void to store address of integer variable then print value of integer variable using pointer to void. Perform the same operation for float variable.
34. Write program to find biggest number among three numbers using pointer and function.
35. 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.
36. Write program to Create a structure Employee having data members to store name of employee, employee id, salary. Use Pointer to structure to simulate dynamic array of structure store data of n employees and print the stored data of n employees using pointer to structure.
37. Write a program to sort a single dimension array of integers of n elements simulated by pointer to integer. Use function for sorting the dynamic array.






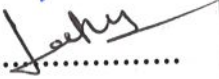



38. Write a program to sum elements of a double dimension array of integers of m rows and n columns simulated by pointer to pointer to integer. Use function for sum the elements of the dynamic array.
39. Write program to demonstrate difference between character array and pointer to character.
40. Write program to demonstrate difference between constant pointer and pointer to constant.
41. Write program to demonstrate pointer arithmetic.
42. write program to demonstrate function-returning pointer.
43. Write program using self-referential pointer to structure to create and print the linked list, data structure.

#### FILE STREAMS

44. 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.
45. Write program to create a file 'data' containing a series of integers and count all even numbers present in the file 'data'.
46. Write a program to count no. of tabs, new lines, character and space of a file.
47. Write a program to read item number, rate and quantity from an inventory file and print the followings:
  1. Items having quantity > 5.
  2. Total cost of inventory.

#### Name and Signatures

Name and Signatures		Departmental members	
V.C. Nominee .....		1. HOD-Mr. Durgesh Kumar Kotangle	.....
Subject Expert .....	 (D. P. Rao)	2. Mr. Dileep Kumar Sahu	 .....
Subject Expert.....		3. Mrs. Latika Tamrakar	 .....
Alumni(member).....			
Prof. from other Dept. of Sc. Faculty .....			
Specialist from Industry .....			