POST GRADUATE DIPLOMA IN COMPUTER APPLICATION
[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.

Second Semester: **PGDCA-106 : GUI - Programming in Visual Basic.**
PGDCA-107 : Database Management System
PGDCA-108 : Essential of E –Commerce & HTML .
PGDCA-109 : Practical based on PGDCA106, PGDCA107 &PGDCA-108
PGDCA-110 : Project

PGDCA-106
GUI - PROGRAMMING IN VISUAL BASIC

UNIT – I

Introduction to visual Basic - Editions of Visual Basic, Event Driven Programming, Terminology, Working environment, project and executable files ,Understanding modules, Using the code editor window, Other code navigation features, Code documentation and formatting, environment options, code formatting option, Automatic code completion features.

Creating Programs - Introduction to objects, Controlling objects, Properties, methods and events, Working with forms, Interacting with the user: MsgBox function, InputBox function, Code statements, Managing forms, Creating a program in Visual Basic, Printing.

UNIT – II

Variable and Procedures - Overview of variables, Declaring, Scope, arrays, User-defined data types, constants working with procedures, Working with dates and times, Using the Format function, Manipulating text strings.

Controlling Program Execution - Comparison and logical operators, If…Then statements, Select Case Statements looping structures, Using Do…Loop structures, For…Next statement, Exiting aloop.

UNIT – III

Working with Controls - Types of controls, Overview of standard controls, ComboBox and ListBox, OptionButton and Frame controls Menu, Status bars, Toolbars, Advanced standard controls, ActiveX controls, Insert table objects, Validation.

Error Trapping & Debugging - Overview of run-time errors, error handling process, The Err object, Errors and calling chain, Errors in an error-handling routine, Inline error handling, Error-handling styles, General error-trapping options Type of errors, Break mode Debug toolbar, Watch window, Immediate window, Local window, Tracing program flow with the Call Stack.

UNIT – IV

Sequential and Random Files - Saving data to file, basic filling, data analysis and file, the extended text editor, Random access file, The design and coding.

Data Access Using the ADO Data Control - Overview of ActiveX data Objects, Visual Basic data access features, Relational database concepts Using the ADO Data control to access data, Overview of DAO, RDO, Data Control, structured query language (SQL), Manipulating data Using Data Form Wizard.

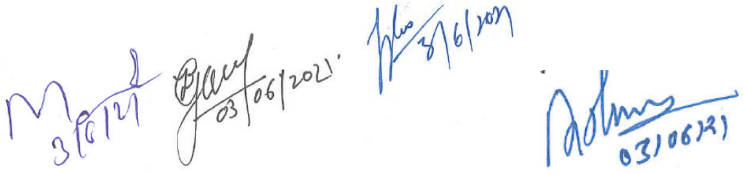
UNIT – V

Report Generation - Overview of Report, Data Report, Add groups, Data Environment, Connection to database Introduction to Crystal Report Generator.

Advances Tools - Overview of drag and drop, Mouse events, Drag-and drop basics, Date Time Control, Calendar, Print Dialog, MDI (Multiple Document Interface).

BOOK RECOMMENDED:

Mastering Visual Basic 6Fundamentals – By Microsoft Mastering
in Visual Basic – By BPB Publications.
Introduction to VB Programming – V. K. Jain



PGDCA-107
Database Management System

UNIT – I : Introduction To DBMS

Data, Information and knowledge, concept of DBMS, Advantages of DBMS, data independence, database administration roles, DBMS architecture, different kinds of DBMS users, importance of data dictionary, contents of data dictionary, types of database languages. Data models: network, hierarchical, relational, Introduction to ODBC concept.

UNIT – II : E-R Model

Entity - Relationship model as a tool for conceptual design-entities, attributes and relationships. ER diagrams; Concept of keys; Case studies of ER modeling Generalization; specialization and aggregation.

UNIT – III: Relational Model

Structure to Relational Database, Relational Algebra, Extended Relational- Algebra Operation, Simple and complex queries using relational algebra, The Domain Relational Calculus, Tuple relational calculus.

UNIT – IV : Relational Database Design

Pitfalls in Relational Database Design, Decomposition, Functional Dependencies, Normalization: 1NF, 2NF, BCNF, 3NF, 4NF, 5NF.

UNIT – V : Structured Query Language :

DDL and DML: Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries. Views: What is Views, Create, Drop and Retrieving data from views. **Security**: - Management of Roles, Changing Password, Granting Roles & Privilege, with drawing privileges.

Suggested Books:

1. Data base system : Korth & Silberschatz.
2. Data Base Management System : Alexies & Mathews
3. An Introduction to Database System : C.J. Date
4. Data Base Management System : Raguramakrishnan.
5. Data Base Management System : Elmasri & Nawathe.

PGDCA-108
ESSENTIALS OF E –COMMERCE & HTML

UNIT – I

Introduction to Electronic Commerce –The scope of E-commerce; Size, growth and future projection of E-commerce market Worldwide and in India; Internet and its impact on traditional businesses; Definition of E-commerce; Business models in E –Commerce environment; Case studies. *Emergence of E-commerce* - E-commerce on private networks, Electronic Data Interchange (EDI), What is EDI, EDI in action, EDI basics, EDI standards, financial EDI, FEDI for international trade transaction, FEDI payment system within the US, ACH credit transfer payment system FEDI, application of EDI, benefits of EDI, Electronics Payment system, E-commerce on the web, E-commerce in India,

UNIT – II

Internet, Security and E-Commerce: Security of Data/Information in Internet/web environment; Client security, Network security; Virus protection and Hacking; Security Measures: Authentication, Integrity, Privacy, Non-repudiation; Public information, Private information, firewall tunnels, encryption,

secret key encryption, public key encryption, digital signature. Business–to-Business (B2B), Business-to-Consumer (B2C); Business-to-Business-to-Consumer (B2B2C) and Consumer-to-Consumer (C2C) E-Commerce

UNIT – III

HTML Basics & Web Site Design Principles –Concept of a Web Site, Web Standards, What is HTML? HTML Versions, Naming Scheme for HTML Documents , HTML document/file, HTML Editor , Explanation of the Structure of the homepage , Elements in HTML Documents ,HTML Tags, Basic HTML Tags, Comment tag in HTML, Viewing the Source of a web page, How to download the web page source? XHTML, CSS, Extensible Markup Language (XML), Extensible Style sheet language (XSL), Some tips for designing web pages, HTML Document Structure. HTML Document Structure-Head Section, Illustration of Document Structure,<BASE> Element,<ISINDEX> Element,<LINK> Element ,META ,<TITLE> Element,<SCRIPT> Element ,Practical Applications, *HTML Document Structure-Body Section:-* Body elements and its attributes: Background; Background Color; Text; Link; Active Link (ALINK); Visited Link (VLINK); Left margin; Top margin ,Organization of Elements in the BODY of the document: Text Block Elements; Text Emphasis Elements; Special Elements -- Hypertext Anchors; Character-Level Elements; Character References ,Text Block Elements: HR (Horizontal Line); Hn (Headings) ; P (Paragraph); Lists; ADDRESS ; BLOCKQUOTE; TABLE; DIV (HTML 3.2 and up) ; PRE (Preformatted); FORM ,Text Emphasis Elements, Special Elements -- Hypertext Anchors ,Character-Level Elements: line breaks (BR) and Images (IMG),Lists ,ADDRESS Element, BLOCKQUOTE Element, TABLE Element ,COMMENTS in HTML ,CHARACTER Emphasis Modes, Logical & Physical Styles, Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER.

UNIT – IV

Image, Internal and External Linking between Web Pages - Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER. Insertion of images using the element IMG (Attributes: SRC (Source), WIDTH, HEIGHT, ALT (Alternative), ALIGN), IMG (In-line Images) Element and Attributes; Illustrations of IMG Alignment, Image as Hypertext Anchor, Internal and External Linking between Web Pages. Hypertext Anchors, HREF in Anchors, Links to a Particular Place in a Document, NAME attribute in an Anchor ,Targeting NAME Anchors ,TITLE attribute, Designing Frames in HTML.

UNIT – V

Creating Business Websites with Dynamic Web Pages – Concept of static web pages and dynamic web pages. Hosting & promotion of the web site, Domain Name Registration, Web Space allocation, Uploading / Downloading the website- FTP, cute FTP. Web Site Promotion Search Engines, Banner Advertisements.

Recommend Books –

1. Business on the net - by Kamlesh N. Agarawala , Amit Lal & Deeksha Agarawal (Macmillan India Ltd.).
2. Introduction to HTML by Kamlesh N. Agarwala, O.P.Vyas, Prateek A. Agarwala. (Kitab Mahal

Publications).
3.. ASP Developer's Guide – by Greg Buczek (TATA McGraw Hill).
4. Information Technology Act 2000: www.mit.gov.in/it-bill.htm

PGDCA-109: Practical based on PGDCA106, PGDCA107 & PGDCA108

1 Scheme of Examination:-

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

Question 1(VB)	-	15
Question 2(VB)	-	15
Question 3(SQL)	-	15
Question 4(HTML/Web Design)	-	15
Viva	-	25
[Practical Copy + Internal Record]	-	15
Total	-	**100**

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

List of Practical of Visual Basic

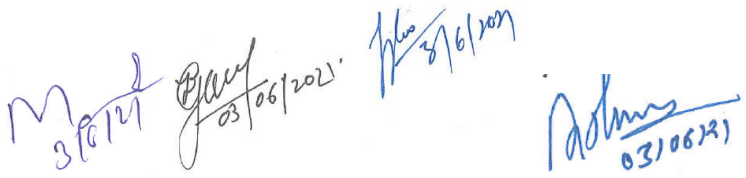
1. WAP to perform arithmetic operation **using command buttons**. (**Declare variables globally**).
2. WAPtotakeinputofprincipal,rate&timeandcalculatesimpleinterest&compoundinterest.
3. Write a program to take input of x and print table of x in the following

   format. X * 1 =X
   X * 2 = 2X

   X * 10 = 10*X
4. Design an interface, which will appear like marksheet. It will take input of marks in five subjects and calculate total marks and percentage then provide grade according to following criteria. (**Using nested if**) (Use tab index property to move focus).

If %	Then Grade
>=90	A+
> = 75 &<90	A
> = 60 &<75	B
> = 45 &<60	C
Otherwise	F

5. WAP to create a simple calculator (**Using control array)**
6. Write a program to check whether ancentered no. is prime or not.**(Using for loop & Exit for)**
7. Write a program which will count all vowels, consonants, digits, special characters and blank spaces in a sentences (Using **select case**)
8. WAP to illustrate all functionalities of **listbox** and **combobox**.
9. WAP using **check boxes** for following font
   effects. Bold
   Italic
   Underline
   Increase font size
   Decrease font size
   Font color
10. WAP for temperature conversion using **optionbutton**.
11. WAP to launch a rocket using **pictures box** and **timer control**.
12. WAP to change back color of any control (label, textbox) using **scroll box**.



13. WAP to search an element for a **one dimension static array**.
14. WAP to sort a dynamic array
    of (a)n numbers
    (b)n strings (Input array size at run time)
15. WAPtotakeinputoftwomatricesandperformtheiraddition,subtractionandmultiplicationusing **menu editor**.
17. WAP to illustrate **call by value and call by reference** (to swap to values)
18. Write a program to calculate factorial of a number using **user defined function.**
19. Take input of a word and WAP to check whether it is a palindrome or not. **(Without using structure fun)**
20. WAP to find smallest among given three numbers using **user defined procedures**.
21. WAP to generate, print and find sum of first n elements of fibonacci series using **recursion**.
22. WAP to perform read write operations in a **sequential file**.
23. Create a **user defined data type** having fields name (as string of length 20 bytes), Roll no (as integer), class (as string of 10 bytes). WAP to create a **random access file** to store above data and perform following operations in this file.

(a) Write new record (b) Read / display existing record (c) Delete any record (d)Search any record (e) close the file (f) Lists elected records

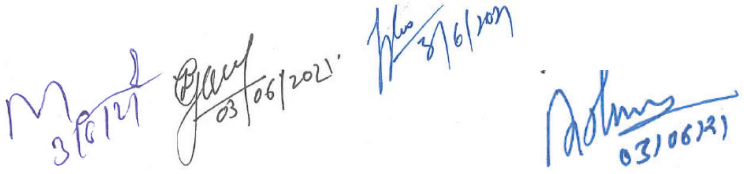
24. WAP to display records of a table using **DAO & bound control** code for buttons to move at first record, next record, previous record, last record in the table.
25. Create a table using **visual data manager** and write a program using **RDO** &**advanced bound control** to add, delete, edit & navigate records.
26. WAP to access a database using **ADO &**display a key column in the combo box or list box when an item is selected in it, its corresponding records is shown in **MSH flexgrid.**
27. Using **Data Environment** create a program to display records of any table.
28. WAP to generate marksheet of students in a class through **data report**.
29. WAP to illustrate various **key board and mouse events**.
30. Using **drive, directory and file list box** (it will show only .bmp files). Let the user select the bmp files, which will appear in picture box as user click on any item in list box.
31. Using **toolbar** design an interface for string manipulation. Toolbar should have tabs to
    (a) Find length of string (b) No of blank spaces in sting (c) Reverse the string
    Also show current date & time in **status bar.**

List of Practical of SQL

1. Using the following database,
   Colleges (cname, city, address, phone, afdate)
   Staffs (sid, sname, saddress, contacts)
   StaffJoins (sid, cname, dept, DOJ, post, salary)
   Teachings (sid, class, paperid, fsession, tsession)
   Subjects (paperid, subject, paperno, pape rname)

Write SQL statements for the following –

a. Create the above tables with the given specifications and constraints.
b. Insert about 10 rows as are appropriate to solve the following queries.
c. List the names of the teachers teaching computer subjects.
d. List the names and cities of all staff working in your college.
e. List the names and cities of all staff working in your college who earn more than15,000
f. Find the staffs whose names start with ‘M’ or ‘R’ and ends with ‘A’ and/or 7 characters long.
g. Find the staffs whose date of joining is2005.
h. Modify the database so that staff N1 now works in C2College.
i. List the names of subjects, which T1 teaches in this session or all sessions.
j. Find the classes that T1 do not teach at present session.
   a. Find the colleges who have most number of staffs.
   b. Find the staffs that earn a higher salary who earn greater than average salary of their college.



c. Find the colleges whose average salary is more than average salary ofC2
d. Find the college that has the smallest payroll.
e. Find the colleges where the total salary is greater than the average salary of all colleges.
f. List maximum, average, minimum salary of each college
a. List the names of the teachers, departments teaching in more than one department.
b. Acquire details of staffs by name in a college or each college.
c. Find the names of staff that earn more than each staff of C2College.
d. Give all principals a 10% rise in salary unless their salary becomes greater than 20,000 in such case give 5%rise.
e. Find all staff that do not work in same cities as the colleges they work.
f. List names of employees in ascending order according to salary who are working in your college or all colleges.
    a. Create a view having fields sname, cname, dept, DOJ, andpost
    b. Create a view consisting of cname, average salary and total salary of all staff in that college.
    c. Select the colleges having highest and lowest average salary using above views.
    d. List the staff names of a department using above views.

2. Create the following database,

    Enrollment (enrollno, name, gender, DOB, address, phone)
    Admission (admno, enrollno, course, yearsem, date, cname)
    Colleges (cname, city, address, phone, afdate)
    FeeStructure (course, yearsem, fee)
    Payment (billno, admno, amount, pdate, purpose)

    a. Create the above tables with the given specifications and constraints.
    b. Insert about 10 rows as are appropriate to solve the following queries.
    c. Get full detail of all students who took admission this year class wise
    d. Get detail of students who took admission in Bhilai colleges.
    e. Calculate the total amount of fees collected in this session
    i) By your college ii) by each college iii) by all colleges
        a. List the students who have not payed full fee
        i) in your college ii) in all colleges
        b. List the number of admissions in your class in every year.
        c. List the students in the session who are not in the colleges in the same city as they live in.
        d. List the students in colleges in your city and also live in your city.

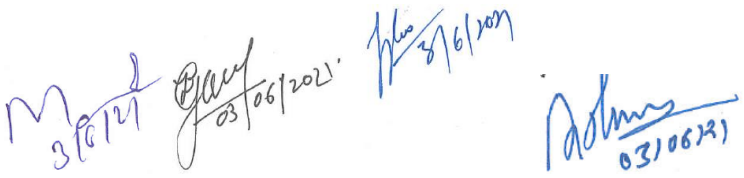
3. Create the following database,

    Subjects (paperid, subject, paper, papername)
    Test (paperid, date, time, max, min)
    Score (rollno, paperid, marks, attendence)
    Students (admno, rollno, class, yearsem)

    a. Create the above tables with the given specifications and constraints.
    b. Insert about 10 rows as are appropriate to solve the following queries.
    c. List the students who were present in a paper of a subject.
    d. List all roll numbers who have passed in first division.
    e. List all students in BCA-II who have scored higher than average
    i) in your college ii) in every college
    f. List the highest score, average and minimum score in BCA-II i) in your college ii)in every college

4. Using the following database

    Colleges (cname, city, address, phone, afdate)
    Staffs (sid, sname, saddress, contacts)
    StaffJoins (sid, cname, dept, DOJ, post, salary)



Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

Write SQL statements for the following –

a. Create the above tables with the given specifications and constraints.
b. Insert about 10 rows as are appropriate to solve the following queries.
c. List the names of the teachers teaching computer subjects.
d. List the names and cities of all staff working in your college.
e. List the names and cities of all staff working in your college who earn more than15,000

5. Using the following database
Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts)
StaffJoins (sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the staffs whose names start with 'M' or 'R' and ends with 'A' and/or 7 characters long.
b. Find the staffs whose date of joining is2005.
c. Modify the database so that staff N1 now works in C2college.
d. List the names of subjects which T1 teaches in this session or all sessions.

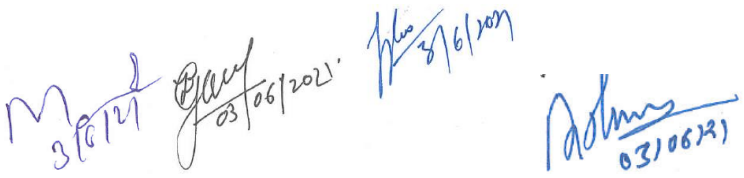
6. Using the following database
Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts)
StaffJoins (sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the classes that T1 do not teach at present session.
b. Find the college who have most number of staffs.
c. Find the staffs who earn a higher salary who earn greater than average salary of their college.
d. Find the colleges whose average salary is more than average salary ofC2
e. Find the college that has the smallest payroll.
f. Find the colleges where the total salary is greater than the average salary of all colleges.
g. List maximum, average, minimum salary of each college

7. Using the following database
Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts) StaffJoins
(sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the classes that T1 do not teach at present session.
b. List the names of the teachers, departments teaching in more than one departments.
c. Acquire details of staffs by name in a college or each college.
d. Find the names of staff who earn more than each staff of C2college.
e. Give all principals a 10% rise in salary unless their salary becomes greater than 20,000 in such case give 5%rise.
f. Find all staff who do not work in same cities as the colleges they work.
g. List names of employees in ascending order according to salary who are working in your college or all colleges.

8. Using the following database



Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts) StaffJoins
(sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the classes that T1 do not teach at present session.
b. Create a view having fields sname, cname, dept, DOJ, and post
c. Create a view consisting of cname, average salary and total salary of all staff in that college.
d. Select the colleges having highest and lowest average salary using above views.
e. List the staff names of a department using above views.

9. Enrollment (enrollno, name, gender, DOB, address, phone)
Admission (admno, enrollno, course, yearsem, date, cname)
Colleges (cname, city, address, phone,afdate)
FeeStructure (course, yearsem, fee)
Payment (billno, admno, amount, pdate, purpose)

a. Create the above tables with the given specifications and constraints.
b. Insert about 10 rows as are appropriate to solve the following queries.
c. Get full detail of all students who took admission this year classwise
d. Get detail of students who took admission in Bhilai colleges.
e. Calculate the total amount of fees collected in this session
i) by your college ii) by each college iii) by all colleges

10. Enrollment (enrollno, name, gender, DOB, address, phone)
Admission (admno, enrollno, course, yearsem, date, cname)
Colleges (cname, city, address, phone,afdate)
FeeStructure (course, yearsem, fee)
Payment (billno, admno, amount, pdate, purpose)

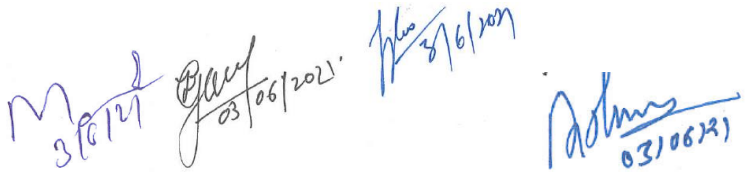
a. List the students who have not payed full fee
i) in your college ii) in all colleges
b. List the number of admissions in your class in every year.
c. List the students in the session who are not in the colleges in the same city as they live in.
d. List the students in colleges in your city and also live in your city.

11. Subjects (paperid, subject, paper,papername)
Test (paperid, date, time, max,min)
Score (rollno, paperid, marks, attendence)
Students (admno, rollno, class, yearsem)

a. Create the above tables with the given specifications and constraints.
b. Insert about 10 rows as are appropriate to solve the following queries.
c. List the students who were present in a paper of a subject.
d. List all roll numbers who have passed in first division.
e. List all students in MCA-II who have scored higher than average
i) in your college ii) in every college
f. List the highest score, average and minimum score in MCA-II
i) in your college ii) in every college

List of Practical of HTML

At least 10 practical of HTML & Web Designing



PGDCA-110: Project

1. Scheme of Examination:- The Project should be done by individual student.

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

Software Demonstration	-	40
Project Report (Hard Copy + Soft Copy)	-	20
Project Demonstration/Presentation	-	20
Project Viva	-	20
Total	-	**100**

2. Format of the student project report on completion of the project

- Cover page as performat
- Certificate of Approval
- Certificate of project guide/Center Manager
- Certificate of the company/Organization
- Certificate of Evaluation
- Declaration / Self Certificate
- Acknowledgement

In the "Acknowledgement" page, the writer recognizes his /her indebtedness for guidance and assistance of the thesis/report adviser and other members of the faculty. Courtesy demands that he/she also recognize specific contributions by other persons or institutions such as libraries and research foundations. Acknowledgements should be expressed simply, tastefully, and tactfully.

- Synopsis of the project
- Main Report
  - ✓ Objectives & Scope of the project
  - ✓ Theoretical Background of Project
  - ✓ Definition of problem
  - ✓ System Analysis &Design
  - ✓ System Planning (PERTC hart)
  - ✓ Methodology adopted, system Implementation & Detail of Hardware & Software used
  - ✓ System maintenance &Evaluation
  - ✓ Cost and benefit Analysis
  - ✓ Detailed Life Cycle of the project
    - ERD,DFD
    - Input and Output Screen Design
    - Process involved
    - Methodology used for testing
    - Test Report, Printout of the code sheet
  - ✓ User/Operational Manual- including security aspects, access rights, back up, Controls etc.
  - ✓ Conclusion
  - ✓ References
  - ✓ Soft copy of the project on CD

Formats of various certificates and formatting styles are as:

1. **Project report Cover Format**:

A
Project Report
On

Title of the Project Report

(Times New Roman. Italic, Font Size=24)
Submitted in partial fulfillment of the requirements for the award of degree
Post Graduate Diploma in Computer Application

2. Certificate of Approval by Head of the Department in letterhead

CERTIFICATE OF APPROVAL

This is to certify that the Project work entitled"_____"is carried out by Mr/Ms/Mrs_____ , a student of PGDCA at (**College Name)** is hereby approved as a credible work in the discipline of Computer Science & Information Technology for the award of degree of **Post Graduate Diploma in Computer Application** during the year _____**From Durg University, Durg(CG).**

(Head Name)

2. Certificate from the Guide in letterhead

CERTIFICATE

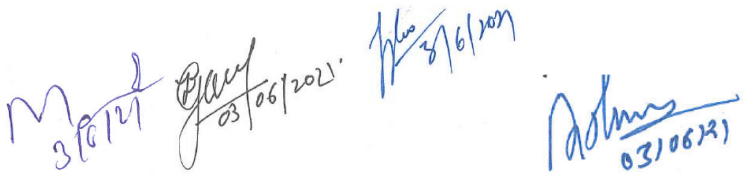
This is to certify that the Project worken titled"_____"Submitted to the **(College Name)** by Mr/Ms/Mrs_____RollNo_____,in partial fulfillment for the requirements relating to nature and standard of the award of **Post Graduate Diploma in Computer Application** degree by **, Durg University, Raipur (CG)** for the academic year 20_ - 20 _.

This project work has been carried out under my guidance.

(Guide Name)

3. Certificate of the Company or Organization from where the Project is done from the Project Manager or Projectguide.

4. Certificate of evaluation in the department letterhead



CERTIFICATE OF EVALUATION

This is to certify that the Project work entitled"_____"is carried out by Mr/Ms/Mrs_____, a student of PGDCA at (**College Name),** after proper evaluation and examination, is hereby approved as a credible work in the discipline of Computer Science & Information Technology and is done in a satisfactory manner for its acceptance as a requisite for the award of degree of **Post Graduate Diploma in Computer Application** during the year_____ from **Durg University, Durg (CG).**

Internal Examiner **External Examiner**

5. Declaration of Student / Self Certificate

DECLARATION

This to certify that the project report entitled"_____",which is submitted by me in the partial fulfillment for the award of the degree of **Post Graduate Diploma in Computer Application, (College Name),** comprises the original work carried out by me.

I further declare that the work reported in this project has not been submitted and will not be submitted, either in part or in full for the award of any other degree or diploma in this Institute or any other Institute or University.

Place: (Name)
Date: (Roll No)

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