

DEPARTMENT OF COMPUTER SCIENCE
COURSE CURRICULUM & MARKING SCHEME

PGDCA
Semester - II
SESSION : 2019-20



ESTD: 1958

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

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

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

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PGDCA

SEMESTER-II

GOVT.V.Y.T.P.G. AUTO. COLLEGE, DURG(C.G.)

POST GRADUATE DIPLOMA IN COMPUTER APPLICATION, 2019-20

[DURATION - ONE YEAR - FULL-TIME]

The duration of the course shall be one year consisting of two semesters. There shall be three theory and two practical course 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 a loop.

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

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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 Data base System | : C.J. Date |
| 4. Data Base Management System | : Raguramakrishnan. |
| 5. Data Base Management System | : Elmasri & Nawathe. |

Name & Signature

Departmental members

V.C. Nominee *[Signature]* 20/8/19

Subject Expert *[Signature]*

Subject Expert..... *[Signature]*

Alumni(member)....B.: *[Signature]* Darangan

Prof. from other Dept. of Sc. Faculty *[Signature]* 25/8/19

Specialist from Industry *[Signature]*

1. In-charge Head /Dr. J. K. Saluja
..... *[Signature]*
2. Mr. Durgesh Kumar Kotangle
..... *[Signature]*
3. Mr. Dileep Kumar Sahu
..... *[Signature]*

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> Element, <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 WebPages - 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. Agarwala, Amit Lal & Deeksha Agarwal (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

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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. WAP to take input of principal, rate & time and calculate simple interest & compound interest.
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 an centered 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 option button.
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. WAP to take input of two matrices and perform their addition, subtraction and multiplication using 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.

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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), Rollno (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 (f) List selected records (e) close the file
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 flex grid**.
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, address, 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 than 15,000.
- 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 is 2005.
- h. Modify the database so that staff N1 now works in C2 College.
- 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 of C2
 - 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 C2 College.
- 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, and post
 - 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)

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Admission (admno, enrollno, course, yearsem, date, cname)

Colleges (cname, city, address, phone, afdate)

FeeStructure (course, yearsem, fee)

Payment (billno, admno, amount, pdate, purpose)

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

Students (admno, rollno, class, yearsem)

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

- Create the above tables with the given specifications and constraints.
- Insert about 10 rows as are appropriate to solve the following queries.
- List the names of the teachers teaching computer subjects.
- List the names and cities of all staff working in your college.
- List the names and cities of all staff working in your college who earn more than 15,000

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)

- Find the staffs whose names start with 'M' or 'R' and ends with 'A' and/or 7 characters long.
- Find the staffs whose date of joining is 2005.
- Modify the database so that staff N1 now works in C2 college.
- 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)

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