GOVT. BILASA GIRLS' P.G. COLLEGE
BILASPUR (C.G.)

AFFILIATED TO

ATAL BIHARI VAJPAYEE VISHWAVIDYALAYA
BILASPUR (C.G.)

SYLLABUS

POST GRADUATE DIPLOMA IN
COMPUTER APPLICATION

(PGDCA)

2018-19

2018-19

Structure & Syllabi for One Year PG Diploma Programme of P.G.D.C.A.

1. The title of the programme will be Post Graduate Diploma in Computer Application (P.G.D.C.A.) and will be introduced from the academic year 2014-15.
2. **Objectives:** The objectives of the Programme shall be to provide sound academic base for proceeding career in Computer Application.
3. **Eligibility for admission:** In order to be eligible for admission to PGDCA a candidate must be Graduate in any stream with minimum 40% marks in aggregate.
4. **Duration:** The duration of the P.G.D.C.A. Program shall be one year .
5. **The scheme of Examinations:** The P.G.D.C.A. Examination will be of 800 marks as given Below:
   I) Theory Papers: 600 marks
   II) Project and Practical Papers: 200 marks
6. **The Standard of Passing and Award of Class**
   In order to pass in the examination the candidate has to obtain 40% marks out of 100. (Min 40% marks must be obtained in theoretical papers as well as practical papers of University Examination).
   The class will be awarded on the basis of aggregate marks obtained by the candidate for examinations.
7. The Medium of Instruction and Examination (Written and Viva) shall be English/Hindi.
8. **Instructions to Paper Setters:**
   a. In each theory paper, six questions are to be set and paper have maximum 100 marks. Question paper should be in English as well as Hindi.
   b. Question No. 1 should be compulsory and cover the entire syllabus. This question should have objective or short answer type questions. It should be of 30 marks.
   c. Apart from Question No. 1, rest of the paper shall consist of five units as per the syllabus. Every unit should have two questions.

SYLLABUS

P.G. DIPLOMA IN COMPUTER APPLICATION

YEAR WISE PLAN
PGDCA

S.N.	Subject Name	End Semester Examination Maximum Marks	End Semester Examination Minimum Passing Marks
1	Fundamentals of Computer and Information Technology	100	40
2	PC- Packages and Computerized Accounting System	100	40
3	Data Communication and Computer Network	100	40
4	Programming using „C" & C++	100	40
5	Relational Database Management System (Oracle)	100	40
6	System Analysis & Design	100	40
7	PC Package and Tally ERP Lab	50	17
8	C,C++ and Oracle Lab	50	17
9	Project	100	40

GOVT. BILASA GIRLS P.G. COLLEGE BILASPUR (C.G.)
2018-19

SYLLABUS
P.G. DIPLOMA IN COMPUTER APPLICATION

PAPER-I
FUNDAMENTALS OF COMPUTER & INFORMATION TECHNOLOGY

UNIT-I
Introduction to Computer and Information Technology: Brief history of development of computer & generations of computer, Computer system characteristics. Capabilities and limitations block diagram of computer. Types of computer-Analog, Hybrid, digital, micro, mini, mainframe, super computer. Personal computer, types of PCs desktop, laptop, notebook, palmtop etc. Number system Data representation in computers, Number system of computers binary, octal, hexadecimal, representation & their conversion, Coding system ASCII, BCD, EDCDIC etc.

UNIT-II
INPUT/OUTPUT devices: keyboard, mouse, monitor, trackball, joystick, digitizing table, scanners, digital cameras, MICR, OCR, OMR, Bar-code reader, Voice recognition, light pen, touch screen, devices, printer, plotter.

UNIT-III
Storage device: Data storage and retrieval methods-sequential, direct and index sequential- various storage devices-magnetic tape, magnetic disks, cartridge tape, data drives hard disk drives, floppy disks, optical disks-CD, VCD, CDR, CDRW, DVD.

UNIT-IV
Computer software: types of software, system software, application software, operating system, utility program, assemblers, compilers and interpreter. Operating system functions, Types batch, single user, multi user, multiprogramming, multiprocessing, Programming languages, machine, assembly, high level, 4GL, their merits and demerits. Computer virus –types of virus, virus detection & prevention virus on network.

UNIT-V
Data Communication & networks: analog and digital signals, modulations, amplitude modular (am), frequency modulation (fm), phase modulation (pm), communication process, direction of transmission flow, simplex, half duplex, full duplex. Types of network LAN, WAN, MAN etc, Topologies of LAN ring, bus star, mesh and tree topologies, communication protocols TCP/IP protocol suit. Communication channels media twisted, coaxial fiber optic, serial and parallel communication, Network operating system (NOS), bridges, hub, routers, repeater and gateways. Modem working and characteristics. Types of connections- dialup leased lines, ISDN, broadband.

Text&ReferenceBooks:

01. Computer fundamentals, P.K. Sinha, BPB
02. Computer today by S.K. Basandra Galgotia Publications.
03. Fundamentals of information by Axexos Leon & Mathews Leon, Vikas Publishing House, New Delhi

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P.G. DIPLOMA IN COMPUTER APPLICATION

SYLLABUS

PAPER-II
PC PACKAGES & COMPUTERIZED ACCOUNTING SYSTEM

UNIT-I

Fundamental of DOS & Windows: Fundamental of DOS booting process, internal and external commands, creating and executing batch files and directories creating text files. Introduction to windows features, various versions of windows, origin of windows parts of windows screen types and anatomy of windows using.

UNIT-II

Introduction to word processing (MS-word): Advantages of word processing, editing a file using paragraphs, bullets, indentation, ect. Formatting features, printing the documents, it includes paper-size, margins, header and footer, page no., using macros. Advance word processing, header and footers. Finding text, mail merge and other application, mathematical calculations, table handing.

UNIT-III

Introduction to spread sheet (MS-Excel): Definition and advantages of electronic worksheet, working of spread sheet, range and related operations. Setting saving and retrieving work sheet file, inserting deleting coping & moving of data cells, inserting and deleting rows & columns, protecting cell printing a worksheet, erasing a worksheet, graphs, creation, types of graphs creating a chart sheet 3D column charts, moving and changing the size of chart, printing the chart.

UNIT-IV

Introduction to Powerpoint (MS- Powerpoint): Creating a presentation, inserting/deleting slides, different slide views, editing slides,. Slide transition & editing special effects inserting sound, picture, chart, organization chart.

UNIT-V

Accounting software Tally ERP 9: Basic principles of double entry accounting system, creating new company security controls, groups, ledger, voucher type, modifying, new company, voucher entry, generating profit & loss account, trial balance and balance sheet, backup & restore.

Text&ReferenceBooks:

01. Comdex Computer Course Kit (Windows 7 with office 2010), Gupta vikas, Dreamtech Publication.
02. Mastering MS Office 2000, Professional Edition by Courter, BPB Publication.
03. MS Office 2000 Training Guide by Maria, BPB Publication.
04. PC Software, Ravi Taxalli, BPB
05. Computer Fundamental by P.K. Sinha
06. Financial Accounting with Tally 9.001 edition by Vikas Gupta.
07. Mastering Tally ... ERP 9 By A.K. Nandhani.

SYLLABUS
PAPER-III
DATACOMMUNICATION&COMPUTERNETWORK

UNIT-I

Introduction to Data Communication– Network models, protocols and architecture, standards organizations, line configuration, topology, transmission mode, classification of networks, OSI reference model, TCP/IP model.

UNIT- II

Analog and digital signals, Data encoding, parallel and serial transmission, modems, transmission media: guided media, unguided media, transmission impairment, performance, Synchronousandasynchronoustransmission.

UNIT- III

Multiplexing, LLC, error detection and correction, flow control, HDLC, LANs- applications, architecture, Ethernet, 802.3 LANs, token ring, FDDI, IEEE 802.6, circuit switching, packet switching, messageswitching, connection oriented and connectionless services.

UNIT-IV

Principles of internetworking– connection– oriented, connectionless, Routing concepts, routing algorithms– distance-vector routing, link state routing, shortest path routing. Congestion control, QOS, internetworking, network devices.

UNIT-V

Network security requirements and attacks, public key and private key encryption and digital signatures, digital certificate, firewalls, IDS (Intrusion Detection System)

Text&ReferenceBooks:

01. Computer networks– A.S. Tanenbaum. PHI
02. Data communicationand networking – Behrous A. Forouzan. TMH

GOVT. BILASA GIRLS P.G. COLLEGEBILASPUR (C.G.)
2018-19

P.G. DIPLOMA IN COMPUTER APPLICATION

SYLLABUS

PAPER-IV
SYSTEM ANALYSIS AND DESIGN

UNIT-I

The system concept: characteristics, elements and types of a system, the system development life cycle, considerations, for candidate systems prototyping. The role of systemanalyst.

UNIT- II

System planning and initial investigation: Information Gathering, information gathering tools. Structured analysis, the tools of structured analysis (DFD, Data Dictionary, Decision tree and Pseudo codes Decision Tables), PROS and CONS of each tool, system performance definition description of outputs, feasibility study. Cost/ Benefit analysis, Data analysis, Cost/ Benefit analysis, thesystemproposal.

UNIT- III

Stages of system design: Design methodologies, development activities, input design, output design forms design, types of forms, basics of formdesign layout considerations and forms control.

UNIT-IV

File structure: File organization, objectives of database, data structure, system testing and quality assurance, why system testing, what do we test for, the test plan quality assurance, trends intesting, role of data processing auditor, training anddocumentation.

UNIT-V

Implementing and software maintenance: conversion combating resistance to change, post implementation review, software maintenance, hardware/software selection and the computer contract, suppliers, procedure for hardware/software selection, financial considerations in selection, the computer contract system security disaster recovery planning.

Text&ReferenceBooks:

01. Systemanalysis and design, Elias M. Awad, Galgotia Publication (P) Ltd.
02. Systemanalysis and design, International Ed. Perry Edwards, McGraw Hill Pub.

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2018-19

P.G. DIPLOMA IN COMPUTER APPLICATION

SYLLABUS

PAPER-V
PROGRAMMINGINC&
C++

UNIT-I

Introduction to "C" Language: Fundamentals, simple I/O statements, reading and writing, data types constants, variable, operators & expressions, library function, control statements, if-else, while, do-while, goto, for statements switch, break, looping statements, functions recursion, arrays, multidimensional arrays, strings & pointers.

UNIT- II

Programming in C++, functions, class, object, constructor and destructor: Call by reference, call by value, return by reference, inline function, constant argument, function overloading, static member function, static data member,. Classes: implementing class, classes and members, accessing class members, implementing class methods, array of object, friend function. Constructor & destructors: parameterized constructor, multiple constructor, constructor with default argument, copy constructor, destructor.

UNIT- III

Operator overloading & type casting: Operator overloading, unary operator overloading, binary operator overloading, manipulates string using operator overloading, type conversions: basic to class, class to basic, class to class.

UNIT-IV

Inheritance, virtual function: single inheritance, multilevel inheritance, multiple inheritance, hybrid inheritance, hierarchical inheritance, virtual base class, abstract class.

UNIT-V

Pointer & File: Pointer to object, this pointer, virtual function and pure virtual function. File: opening and close file, detecting end of the file

TextBooks:

01. Let us C by Yaswant Kanetkar BPB
02. Object oriented Programming with C++, E.Blagurusamy, Tata mc Graw-Hill
03. C++Complete reference, Herbert Schildt, TMH.
04. ANSI C programming, E.Blagurusamy, TMH

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2018-19

P.G. DIPLOMA IN COMPUTER APPLICATION
SYLLABUS

PAPER-VI

RELATIONAL DATABASE MANAGEMENT SYSTEM (ORACLE)

UNIT-I

Overview of Database Management: Data, information, 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 distributed database, client/server databases, object-relational databases, introduction to ODBC concept

UNIT- II

Relational Model: Entity relationship model as a tool for conceptual design-entities attributes and relationships. ER diagrams; concept of keys: candidate key, primary key, alternate key, foreign key; strong and weak entities, case studies of ER modeling generalization; specialization and aggregation, Converting an ER model into relational schema. Extended ER features, introduction to UML, Representation in UML diagram.

UNIT- III

Structured Query Language (SQL): Relational Algebra: select, project, cross product different types of joins (inner join, outer joins, self join); set operations, tuple relational calculus, domain relational calculus, simple and complex queries using relational algebra, stand alone and embedded query languages, introduction to SQL constructs (SELECT...FORM, WHERE... GROUP BY... HAVING ... ORDERBY...), INSERT, DELETE, UPDATE, VIEW definition and use, temporary tables, nested queries, and correlated nested queries, integrity constrains: Not null, unique, check, primary key, foreign key, reference, triggers.

UNIT-IV

Relational database design: Normalization concept in logical model; pitfalls in database design, update anomalies: functional dependencies join dependencies, Normal forms (INF, 2NF, 3NF). Boyce code normal form, decomposition, multi-valued dependencies, 4NF, 5NF. Issues in physical design; concepts of indexes, file organization for relational tables, de-normalization, clustering of tables, clustering indexes.

UNIT-V

Introduction to Query processing and protection the database: parsing, translation, optimization, evaluation and overview of query processing. Protecting the database integrity, security and recovery, Domain constraints, referential integrity, assertion, triggers, security & authorization in SQL

Text&ReferenceBooks:

01. Database system concept, H. Korth and A. Silberschatz, TMH
02. Data Base Management System, C.J. Date, Narosha Publication.
03. An Introduction to database systems – Bipin Desai, Galgotia Publication.
04. SQL,PL?SQL Evan Bayross (2nd edition) BPB publications.

2018-19

PaperVII

PCPackage&TallyERPLab Note: Practical should be as per syllabus of theoretical papers.

PaperVIII

C,C++&OracleLab Note:Practical should be as per syllabus of theoretical papers.

Paper IX

PROJECT

Note:

01. It is compulsory, that students would have group of maximum of two students and project should done under Government sectors/ Public Sector/ Pvt. Limited S/W Company/ Software Technology park of India/ ISO 9001 certified company be etc.
02. The students should not make any project under local or private institutions.
03. The students should make project themselves and project will not be copy of other project.

StepsforLiveProject

01. Getting customer‟‟s requirements
02. Designs, database and business logics.
03. Developing software application project.
04. Testing and implementing the project.
05. Troubleshooting the project application after implementation.

Thebreak-upofmarksforPracticalwillbeas under

S.n	Argument	Maximum Marks	Minimum Passing Marks
1	Lab Record	10	
2	Viva-voce	20	
3	Program Development & Execution	20	
4	Total Marks	50	17

Thebreak-upofmarksforPracticalwillbeas under

S.n	Argument	Maximum Marks	Minimum Passing Marks
1	Lab Record	25	
2	Viva-voce	25	
3	Program Development & Execution	50	
4	Total Marks	100	40

GOVT. BILASA GIRLS P.G. COLLEGE BILASPUR (C.G.)
2017-18

SYLLABUS
P.G. DIPLOMA IN COMPUTER APPLICATION

PAPER-I
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UNIT-I
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INPUT/OUTPUT devices: keyboard, mouse, monitor, trackball, joystick, digitizing table, scanners, digital cameras, MICR, OCR, OMR, Bar-code reader, Voice recognition, light pen, touch screen, devices, printer, plotter.

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Storage device: Data storage and retrieval methods-sequential, direct and index sequential- various storage devices-magnetic tape, magnetic disks, cartridge tape, data drives hard disk drives, floppy disks, optical disks-CD, VCD, CDR, CDRW, DVD.

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Computer software: types of software, system software, application software, operating system, utility program, assemblers, compilers and interpreter. Operating system functions, Types batch, single user, multi user, multiprogramming, multiprocessing, Programming languages, machine, assembly, high level, 4GL, their merits and demerits. Computer virus –types of virus, virus detection & prevention virus on network.

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Data Communication & networks: analog and digital signals, modulations, amplitude modular (am), frequency modulation (fm), phase modulation (pm), communication process, direction of transmission flow, simplex, half duplex, full duplex. Types of network LAN, WAN, MAN etc, Topologies of LAN ring, bus star, mesh and tree topologies, communication protocols TCP/IP protocol suit. Communication channels media twisted, coaxial fiber optic, serial and parallel communication, Network operating system (NOS), bridges, hub, routers, repeater and gateways. Modem working and characteristics. Types of connections- dialup leased lines, ISDN, broadband.

Text&ReferenceBooks:

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P.G. DIPLOMA IN COMPUTER APPLICATION

SYLLABUS

PAPER-II
PC PACKAGES & COMPUTERIZED ACCOUNTING SYSTEM

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SYLLABUS
PAPER-III
DATACOMMUNICATION&COMPUTERNETWORK

UNIT-I

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UNIT- III

Multiplexing, LLC, error detection and correction, flow control, HDLC, LANs- applications, architecture, Ethernet, 802.3 LANs, token ring, FDDI, IEEE 802.6, circuit switching, packet switching, message switching, connection oriented and connectionless services.

UNIT-IV

Principles of internetworking– connection– oriented, connectionless, Routing concepts, routing algorithms– distance-vector routing, link state routing, shortest path routing. Congestion control, QOS, internetworking, network devices.

UNIT-V

Network security requirements and attacks, public key and private key encryption and digital signatures, digital certificate, firewalls, IDS (Intrusion Detection System)

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SYLLABUS

PAPER-IV
SYSTEM ANALYSIS AND DESIGN

UNIT-I

The system concept: characteristics, elements and types of a system, the system development life cycle, considerations, for candidate systems prototyping. The role of systemanalyst.

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System planning and initial investigation: Information Gathering, information gathering tools. Structured analysis, the tools of structured analysis (DFD, Data Dictionary, Decision tree and Pseudo codes Decision Tables), PROS and CONS of each tool, system performance definition description of outputs, feasibility study. Cost/ Benefit analysis, Data analysis, Cost/ Benefit analysis, the systemproposal.

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Stages of system design: Design methodologies, development activities, input design, output design forms design, types of forms, basics of formdesign layout considerations and forms control.

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File structure: File organization, objectives of database, data structure, system testing and quality assurance, why system testing, what do we test for, the test plan quality assurance, trends intesting, role of data processing auditor, training anddocumentation.

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Implementing and software maintenance: conversion combating resistance to change, post implementation review, software maintenance, hardware/software selection and the computer contract, suppliers, procedure for hardware/software selection, financial considerations in selection, the computer contract system security disaster recovery planning.

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P.G. DIPLOMA IN COMPUTER APPLICATION

SYLLABUS

PAPER-V
PROGRAMMINGINC&
C++

UNIT-I

Introduction to "C" Language: Fundamentals, simple I/O statements, reading and writing, data types constants, variable, operators & expressions, library function, control statements, if-else, while, do-while, goto, for statements switch, break, looping statements, functions recursion, arrays, multidimensional arrays, strings & pointers.

UNIT- II

Programming in C++, functions, class, object, constructor and destructor: Call by reference, call by value, return by reference, inline function, constant argument, function overloading, static member function, static data member,. Classes: implementing class, classes and members, accessing class members, implementing class methods, array of object, friend function. Constructor & destructors: parameterized constructor, multiple constructor, constructor with default argument, copy constructor, destructor.

UNIT- III

Operator overloading & type casting: Operator overloading, unary operator overloading, binary operator overloading, manipulates string using operator overloading, type conversions: basic to class, class to basic, class to class.

UNIT-IV

Inheritance, virtual function: single inheritance, multilevel inheritance, multiple inheritance, hybrid inheritance, hierarchical inheritance, virtual base class, abstract class.

UNIT-V

Pointer & File: Pointer to object, this pointer, virtual function and pure virtual function. File: opening and close file, detecting end of the file

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P.G. DIPLOMA IN COMPUTER APPLICATION
SYLLABUS

PAPER-VI

RELATIONAL DATABASE MANAGEMENT SYSTEM (ORACLE)

UNIT-I

Overview of Database Management: Data, information, 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 distributed database, client/server databases, object-relational databases, introduction to ODBC concept

UNIT- II

Relational Model: Entity relationship model as a tool for conceptual design-entities attributes and relationships. ER diagrams; concept of keys: candidate key, primary key, alternate key, foreign key; strong and weak entities, case studies of ER modeling generalization; specialization and aggregation, Converting an ER model into relational schema. Extended ER features, introduction to UML, Representation in UML diagram.

UNIT- III

Structured Query Language (SQL): Relational Algebra: select, project, cross product different types of joins (inner join, outer joins, self join); set operations, tuple relational calculus, domain relational calculus, simple and complex queries using relational algebra, stand alone and embedded query languages, introduction to SQL constructs (SELECT...FORM, WHERE... GROUP BY... HAVING ... ORDERBY...), INSERT, DELETE, UPDATE, VIEW definition and use, temporary tables, nested queries, and correlated nested queries, integrity constrains: Not null, unique, check, primary key, foreign key, reference, triggers.

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Relational database design: Normalization concept in logical model; pitfalls in database design, update anomalies: functional dependencies join dependencies, Normal forms (INF, 2NF, 3NF). Boyce code normal form, decomposition, multi-valued dependencies, 4NF, 5NF. Issues in physical design; concepts of indexes, file organization for relational tables, de-normalization, clustering of tables, clustering indexes.

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PaperVII

PCPackage& PaperVII

PCPackage&TallyERPLab Note: Practical should be as per syllabus of theoretical papers.

PaperVIII

C,C++&OracleLab Note:Practical should be as per syllabus of theoretical papers.

Paper IX

PROJECT

Note:

04. It is compulsory, that students would have group of maximum of two students and project should done under Government sectors/ Public Sector/ Pvt. Limited S/W Company/ Software Technology park of India/ ISO 9001 certified company be etc.
05. The students should not make any project under local or private institutions.
06. The students should make project themselves and project will not be copy of other project.

StepsforLiveProject

06. Getting customer"s requirements
07. Designs, database and business logics.
08. Developing software application project.
09. Testing and implementing the project.
10. Troubleshooting the project application after implementation.

The break-up of marks for Practical will be as under

S.n	Argument	Maximum Marks	Minimum Passing Marks
1	Lab Record	10	
2	Viva-voce	20	
3	Program Development & Execution	20	
4	Total Marks	50	17

S.n	Argument	Maximum Marks	Minimum Passing Marks
1	Lab Record	25	
2	Viva-voce	25	
3	Program Development & Execution	50	
4	Total Marks	100	40

GOVT. BILASA GIRLS P.G. COLLEGE BILASPUR (C.G.)
2016-17

SYLLABUS
P.G. DIPLOMA IN COMPUTER APPLICATION

PAPER-I
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UNIT-I
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INPUT/OUTPUT devices: keyboard, mouse, monitor, trackball, joystick, digitizing table, scanners, digital cameras, MICR, OCR, OMR, Bar-code reader, Voice recognition, light pen, touch screen, devices, printer, plotter.

UNIT-III
Storage device: Data storage and retrieval methods-sequential, direct and index sequential- various storage devices-magnetic tape, magnetic disks, cartridge tape, data drives hard disk drives, floppy disks, optical disks-CD, VCD, CDR, CDRW, DVD.

UNIT-IV
Computer software: types of software, system software, application software, operating system, utility program, assemblers, compilers and interpreter. Operating system functions, Types batch, single user, multi user, multiprogramming, multiprocessing, Programming languages, machine, assembly, high level, 4GL, their merits and demerits. Computer virus –types of virus, virus detection & prevention virus on network.

UNIT-V
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Text&ReferenceBooks:

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P.G. DIPLOMA IN COMPUTER APPLICATION

SYLLABUS

PAPER-II
PC PACKAGES & COMPUTERIZED ACCOUNTING SYSTEM

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Introduction to word processing (MS-word): Advantages of word processing, editing a file using paragraphs, bullets, indentation, ect. Formatting features, printing the documents, it includes paper-size, margins, header and footer, page no., using macros. Advance word processing, header and footers. Finding text, mail merge and other application, mathematical calculations, table handing.

UNIT-III

Introduction to spread sheet (MS-Excel): Definition and advantages of electronic worksheet, working of spread sheet, range and related operations. Setting saving and retrieving work sheet file, inserting deleting coping & moving of data cells, inserting and deleting rows & columns, protecting cell printing a worksheet, erasing a worksheet, graphs, creation, types of graphs creating a chart sheet 3D column charts, moving and changing the size of chart, printing the chart.

UNIT-IV

Introduction to Powerpoint (MS- Powerpoint): Creating a presentation, inserting/deleting slides, different slide views, editing slides,. Slide transition & editing special effects inserting sound, picture, chart, organization chart.

UNIT-V

Accounting software Tally ERP 9: Basic principles of double entry accounting system, creating new company security controls, groups, ledger, voucher type, modifying, new company, voucher entry, generating profit & loss account, trial balance and balance sheet, backup & restore.

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SYLLABUS
PAPER-III
DATACOMMUNICATION&COMPUTERNETWORK

UNIT-I

Introduction to Data Communication– Network models, protocols and architecture, standards organizations, line configuration, topology, transmission mode, classification of networks, OSI reference model, TCP/IP model.

UNIT- II

Analog and digital signals, Data encoding, parallel and serial transmission, modems, transmission media: guided media, unguided media, transmission impairment, performance, Synchronousandasynchronoustransmission.

UNIT- III

Multiplexing, LLC, error detection and correction, flow control, HDLC, LANs- applications, architecture, Ethernet, 802.3 LANs, token ring, FDDI, IEEE 802.6, circuit switching, packet switching, message switching, connection oriented and connectionless services.

UNIT-IV

Principles of internetworking– connection– oriented, connectionless, Routing concepts, routing algorithms– distance-vector routing, link state routing, shortest path routing. Congestion control, QOS, internetworking, network devices.

UNIT-V

Network security requirements and attacks, public key and private key encryption and digital signatures, digital certificate, firewalls, IDS (Intrusion Detection System)

Text&ReferenceBooks:

05. Computer networks– A.S. Tanenbaum. PHI
06. Data communicationand networking – Behrous A. Forouzan. TMH

SYLLABUS

PAPER-IV
SYSTEM ANALYSIS AND DESIGN

UNIT-I

The system concept: characteristics, elements and types of a system, the system development life cycle, considerations, for candidate systems prototyping. The role of systemanalyst.

UNIT- II

System planning and initial investigation: Information Gathering, information gathering tools. Structured analysis, the tools of structured analysis (DFD, Data Dictionary, Decision tree and Pseudo codes Decision Tables), PROS and CONS of each tool, system performance definition description of outputs, feasibility study. Cost/ Benefit analysis, Data analysis, Cost/ Benefit analysis, the systemproposal.

UNIT- III

Stages of system design: Design methodologies, development activities, input design, output design forms design, types of forms, basics of formdesign layout considerations and forms control.

UNIT-IV

File structure: File organization, objectives of database, data structure, system testing and quality assurance, why system testing, what do we test for, the test plan quality assurance, trends intesting, role of data processing auditor, training anddocumentation.

UNIT-V

Implementing and software maintenance: conversion combating resistance to change, post implementation review, software maintenance, hardware/software selection and the computer contract, suppliers, procedure for hardware/software selection, financial considerations in selection, the computer contract system security disaster recovery planning.

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P.G. DIPLOMA IN COMPUTER APPLICATION

SYLLABUS

PAPER-V
PROGRAMMINGINC&
C++

UNIT-I

Introduction to "C" Language: Fundamentals, simple I/O statements, reading and writing, data types constants, variable, operators & expressions, library function, control statements, if-else, while, do-while, goto, for statements switch, break, looping statements, functions recursion, arrays, multidimensional arrays, strings & pointers.

UNIT- II

Programming in C++, functions, class, object, constructor and destructor: Call by reference, call by value, return by reference, inline function, constant argument, function overloading, static member function, static data member,. Classes: implementing class, classes and members, accessing class members, implementing class methods, array of object, friend function. Constructor & destructors: parameterized constructor, multiple constructor, constructor with default argument, copy constructor, destructor.

UNIT- III

Operator overloading & type casting: Operator overloading, unary operator overloading, binary operator overloading, manipulates string using operator overloading, type conversions: basic to class, class to basic, class to class.

UNIT-IV

Inheritance, virtual function: single inheritance, multilevel inheritance, multiple inheritance, hybrid inheritance, hierarchical inheritance, virtual base class, abstract class.

UNIT-V

Pointer & File: Pointer to object, this pointer, virtual function and pure virtual function. File: opening and close file, detecting end of the file

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P.G. DIPLOMA IN COMPUTER APPLICATION
SYLLABUS

PAPER-VI

RELATIONAL DATABASE MANAGEMENT SYSTEM (ORACLE)

UNIT-I

Overview of Database Management: Data, information, 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 distributed database, client/server databases, object-relational databases, introduction to ODBC concept

UNIT- II

Relational Model: Entity relationship model as a tool for conceptual design-entities attributes and relationships. ER diagrams; concept of keys: candidate key, primary key, alternate key, foreign key; strong and weak entities, case studies of ER modeling generalization; specialization and aggregation, Converting an ER model into relational schema. Extended ER features, introduction to UML, Representation in UML diagram.

UNIT- III

Structured Query Language (SQL): Relational Algebra: select, project, cross product different types of joins (inner join, outer joins, self join); set operations, tuple relational calculus, domain relational calculus, simple and complex queries using relational algebra, stand alone and embedded query languages, introduction to SQL constructs (SELECT...FORM, WHERE... GROUP BY... HAVING ... ORDERBY...), INSERT, DELETE, UPDATE, VIEW definition and use, temporary tables, nested queries, and correlated nested queries, integrity constrains: Not null, unique, check, primary key, foreign key, reference, triggers.

UNIT-IV

Relational database design: Normalization concept in logical model; pitfalls in database design, update anomalies: functional dependencies join dependencies, Normal forms (INF, 2NF, 3NF). Boyce code normal form, decomposition, multi-valued dependencies, 4NF, 5NF. Issues in physical design; concepts of indexes, file organization for relational tables, de-normalization, clustering of tables, clustering indexes.

UNIT-V

Introduction to Query processing and protection the database: parsing, translation, optimization, evaluation and overview of query processing. Protecting the database integrity, security and recovery, Domain constraints, referential integrity, assertion, triggers, security & authorization in SQL

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PaperVII

PCPackage& PaperVII

PCPackage&TallyERPLab Note: Practical should be as per syllabus of theoretical papers.

PaperVIII

C,C++&OracleLab Note:Practical should be as per syllabus of theoretical papers.

Paper IX

PROJECT

Note:

07. It is compulsory, that students would have group of maximum of two students and project should done under Government sectors/ Public Sector/ Pvt. Limited S/W Company/ Software Technology park of India/ ISO 9001 certified company be etc.
08. The students should not make any project under local or private institutions.
09. The students should make project themselves and project will not be copy of other project.

StepsforLiveProject

11. Getting customer"s requirements
12. Designs, database and business logics.
13. Developing software application project.
14. Testing and implementing the project.
15. Troubleshooting the project application after implementation.

The break-up of marks for Practical will be as under

S.n	Argument	Maximum Marks	Minimum Passing Marks
1	Lab Record	10	
2	Viva-voce	20	
3	Program Development & Execution	20	
4	Total Marks	50	17

S.n	Argument	Maximum Marks	Minimum Passing Marks
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2	Viva-voce	25	
3	Program Development & Execution	50	
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GOVT. BILASA GIRLS P.G. COLLEGE BILASPUR (C.G.)
2015-16

SYLLABUS
P.G. DIPLOMA IN COMPUTER APPLICATION

PAPER-I
FUNDAMENTALS OF COMPUTER & INFORMATION TECHNOLOGY

UNIT-I
Introduction to Computer and Information Technology: Brief history of development of computer & generations of computer, Computer system characteristics. Capabilities and limitations block diagram of computer. Types of computer-Analog, Hybrid, digital, micro, mini, mainframe, super computer. Personal computer, types of PCs desktop, laptop, notebook, palmtop etc. Number system Data representation in computers, Number system of computers binary, octal, hexadecimal, representation & their conversion, Coding system ASCII, BCD, EDCDIC etc.

UNIT-II
INPUT/OUTPUT devices: keyboard, mouse, monitor, trackball, joystick, digitizing table, scanners, digital cameras, MICR, OCR, OMR, Bar-code reader, Voice recognition, light pen, touch screen, devices, printer, plotter.

UNIT-III
Storage device: Data storage and retrieval methods-sequential, direct and index sequential- various storage devices-magnetic tape, magnetic disks, cartridge tape, data drives hard disk drives, floppy disks, optical disks-CD, VCD, CDR, CDRW, DVD.

UNIT-IV
Computer software: types of software, system software, application software, operating system, utility program, assemblers, compilers and interpreter. Operating system functions, Types batch, single user, multi user, multiprogramming, multiprocessing, Programming languages, machine, assembly, high level, 4GL, their merits and demerits. Computer virus –types of virus, virus detection & prevention virus on network.

UNIT-V
Data Communication & networks: analog and digital signals, modulations, amplitude modular (am), frequency modulation (fm), phase modulation (pm), communication process, direction of transmission flow, simplex, half duplex, full duplex. Types of network LAN, WAN, MAN etc, Topologies of LAN ring, bus star, mesh and tree topologies, communication protocols TCP/IP protocol suit. Communication channels media twisted, coaxial fiber optic, serial and parallel communication, Network operating system (NOS), bridges, hub, routers, repeater and gateways. Modem working and characteristics. Types of connections- dialup leased lines, ISDN, broadband.

Text&ReferenceBooks:

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P.G. DIPLOMA IN COMPUTER APPLICATION

SYLLABUS

PAPER-II
PC PACKAGES & COMPUTERIZED ACCOUNTING SYSTEM

UNIT-I

Fundamental of DOS & Windows: Fundamental of DOS booting process, internal and external commands, creating and executing batch files and directories creating text files. Introduction to windows features, various versions of windows, origin of windows parts of windows screen types and anatomy of windows using.

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Introduction to word processing (MS-word): Advantages of word processing, editing a file using paragraphs, bullets, indentation, ect. Formatting features, printing the documents, it includes paper-size, margins, header and footer, page no., using macros. Advance word processing, header and footers. Finding text, mail merge and other application, mathematical calculations, table handing.

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SYLLABUS
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SYLLABUS

PAPER-IV
SYSTEM ANALYSIS AND DESIGN

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The system concept: characteristics, elements and types of a system, the system development life cycle, considerations, for candidate systems prototyping. The role of systemanalyst.

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P.G. DIPLOMA IN COMPUTER APPLICATION

SYLLABUS

PAPER-V
PROGRAMMINGINC&
C++

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P.G. DIPLOMA IN COMPUTER APPLICATION
SYLLABUS

PAPER-VI

RELATIONAL DATABASE MANAGEMENT SYSTEM (ORACLE)

UNIT-I

Overview of Database Management: Data, information, 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 distributed database, client/server databases, object-relational databases, introduction to ODBC concept

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PaperVII

PCPackage& PaperVII

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PaperVIII

C,C++&OracleLab Note:Practical should be as per syllabus of theoretical papers.

Paper IX

PROJECT

Note:

10. It is compulsory, that students would have group of maximum of two students and project should done under Government sectors/ Public Sector/ Pvt. Limited S/W Company/ Software Technology park of India/ ISO 9001 certified company be etc.
11. The students should not make any project under local or private institutions.
12. The students should make project themselves and project will not be copy of other project.

StepsforLiveProject

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17. Designs, database and business logics.
18. Developing software application project.
19. Testing and implementing the project.
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S.n	Argument	Maximum Marks	Minimum Passing Marks
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3	Program Development & Execution	20	
4	Total Marks	50	17

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GOVT. BILASA GIRLS P.G. COLLEGE BILASPUR (C.G.)
2014-15

SYLLABUS
P.G. DIPLOMA IN COMPUTER APPLICATION

PAPER-I
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UNIT-I
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UNIT-V
Data Communication & networks: analog and digital signals, modulations, amplitude modular (am), frequency modulation (fm), phase modulation (pm), communication process, direction of transmission flow, simplex, half duplex, full duplex. Types of network LAN, WAN, MAN etc, Topologies of LAN ring, bus star, mesh and tree topologies, communication protocols TCP/IP protocol suit. Communication channels media twisted, coaxial fiber optic, serial and parallel communication, Network operating system (NOS), bridges, hub, routers, repeater and gateways. Modem working and characteristics. Types of connections- dialup leased lines, ISDN, broadband.

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P.G. DIPLOMA IN COMPUTER APPLICATION

SYLLABUS

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SYLLABUS
PAPER-III
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SYLLABUS

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GOVT. BILASA GIRLS P.G. COLLEGEBILASPUR (C.G.

P.G. DIPLOMA IN COMPUTER APPLICATION

SYLLABUS

PAPER-V
PROGRAMMINGINC&
C++

UNIT-I

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P.G. DIPLOMA IN COMPUTER APPLICATION
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Overview of Database Management: Data, information, 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 distributed database, client/server databases, object-relational databases, introduction to ODBC concept

UNIT- II

Relational Model: Entity relationship model as a tool for conceptual design-entities attributes and relationships. ER diagrams; concept of keys: candidate key, primary key, alternate key, foreign key; strong and weak entities, case studies of ER modeling generalization; specialization and aggregation, Converting an ER model into relational schema. Extended ER features, introduction to UML, Representation in UML diagram.

UNIT- III

Structured Query Language (SQL): Relational Algebra: select, project, cross product different types of joins (inner join, outer joins, self join); set operations, tuple relational calculus, domain relational calculus, simple and complex queries using relational algebra, stand alone and embedded query languages, introduction to SQL constructs (SELECT...FORM, WHERE... GROUP BY... HAVING ... ORDERBY...), INSERT, DELETE, UPDATE, VIEW definition and use, temporary tables, nested queries, and correlated nested queries, integrity constrains: Not null, unique, check, primary key, foreign key, reference, triggers.

UNIT-IV

Relational database design: Normalization concept in logical model; pitfalls in database design, update anomalies: functional dependencies join dependencies, Normal forms (INF, 2NF, 3NF). Boyce code normal form, decomposition, multi-valued dependencies, 4NF, 5NF. Issues in physical design; concepts of indexes, file organization for relational tables, de-normalization, clustering of tables, clustering indexes.

UNIT-V

Introduction to Query processing and protection the database: parsing, translation, optimization, evaluation and overview of query processing. Protecting the database integrity, security and recovery, Domain constraints, referential integrity, assertion, triggers, security & authorization in SQL

Text&ReferenceBooks:

17. Database system concept, H. Korth and A. Silberschatz, TMH
18. Data Base Management System, C.J. Date, Narosha Publication.
19. An Introduction to database systems – Bipin Desai, Galgotia Publication.
20. SQL,PL?SQL Evan Bayross (2nd edition) BPB publications.

PaperVII

PCPackage& PaperVII

PCPackage&TallyERPLab Note: Practical should be as per syllabus of theoretical papers.

PaperVIII

C,C++&OracleLab Note:Practical should be as per syllabus of theoretical papers.

Paper IX

PROJECT

Note:

13. It is compulsory, that students would have group of maximum of two students and project should done under Government sectors/ Public Sector/ Pvt. Limited S/W Company/ Software Technology park of India/ ISO 9001 certified company be etc.
14. The students should not make any project under local or private institutions.
15. The students should make project themselves and project will not be copy of other project.

StepsforLiveProject

21. Getting customer''s requirements
22. Designs, database and business logics.
23. Developing software application project.
24. Testing and implementing the project.
25. Troubleshooting the project application after implementation.

The break-up of marks for Practical will be as under

S.n	Argument	Maximum Marks	Minimum Passing Marks
1	Lab Record	10	
2	Viva-voce	20	
3	Program Development & Execution	20	
4	Total Marks	50	17

S.n	Argument	Maximum Marks	Minimum Passing Marks
1	Lab Record	25	
2	Viva-voce	25	
3	Program Development & Execution	50	
4	Total Marks	100	40