TEACHING AND EXAMINATION SCHEME
Post Graduate Diploma in Computer Applications
W.E.F. 2019-20

	Paper Name (Theory)	Lec	Tut	Exam Hours	MAX MARKS	
					Sess-ional	Sem Exam
dca-101	Introduction to IT & PC Productivity Tools	3	1	3	20	80
dca-102	Programming with C	3	1	3	20	80
dca-103	Electronic Data Processing	3	1	3	20	80
dca-104	Web Technology	3	1	3	20	80
dca-105	Internet Tools	3	1	3	20	80
	Total of Theory (Sessional & Semester Exam Marks)					**500**

	Paper Name (Practical)	Pract Hours	Exam Hours	Max Marks
dca-106	Lab-Introduction to IT & PC Productivity Tools	3	3	50
dca-107	Lab-Programming with C	3	3	50
dca-108	Lab-Electronic Data Processing	3	3	50
dca-109	Lab-Programming PHP & MYSQL	3	3	50
dca-110	Lab-Internet Tools HMTL	3	3	50
dca-111	Lab-Project	6	6	50
	Total of Practical Marks			**300**

Total of Theory & Practical Marks	**800**

SCHEME FOR PGDCA EXAMINATION

Theory:

Part A:

1. 10 Question of 1 mark each – 10 marks
2. Answer should not exceed more than 20 words
3. All questions are compulsory

Part B:

1. 5 Questions of 2 marks each – 10 marks
2. Answer should not exceed more than 50 words
3. All questions are compulsory

Part C:

1. 3 Questions of 20 marks each – 60 marks. There will be an internal choice in each question.
2. Answer should not exceed 400 words
3. All questions are compulsory.

Sessional:

There will be sessional (internal assessment) of 20 marks conducted by the department.

Practical & Projects:

Practical exams shall be conducted by one internal and one external examiner of a batch of 40 students in a day.

Duration of Practical exam is 3 hours.

A Laboratory Exercise File should be prepared by each student for each practical paper and should be submitted during practical examinations.

Practical of 50 marks distribution is as under:

a. 30 marks for practical examination exercise for 3 questions
b. 10 marks for Viva-voce
c. 10 marks for Laboratory Exercise File

The Project Report work shall be assessed by one internal and one external examiner of a batch of 20 students in a day. The Project work should be allotted to a group of maximum 3 students and a copy of the project should be submitted to the **University**.

SCHEME FOR PGDCA EXAMINATION

The examination for the Post Graduate Diploma in Computer Applications (PGDCA) will consist of one part. The examination shall consist of (a) Theory papers (b) Laboratory/ Practical work and project work. Candidates will be required to pursue a regular, full time course of study at the affiliated college for a period of one academic year in order to be eligible for appearing in the examination.

Eligibility: A candidate seeking admission to the PGDCA shall be required to possess a Bachelor's degree in any discipline with 40% marks in aggregate.

Examination:

1. A candidate who completes a regular course of study for one academic year shall be eligible to appear in PGDCA examination.
2. There shall be 11 papers (5theory, 5 practical and 1 project as practical) of 800 marks. Theory paper shall be of 3 hours duration having 100 marks. Out of 100 marks 20 marks shall be considered as internal assessment based on internal test and seminars and 80 marks will be of examination as determined by the University. The practical shall be of 50 marks assessed by external examiner and the project work shall be of 50 marks based on project presentation and viva-voce, assessed by external examiner.
3. For passing a candidate shall have to secure at least 36% marks in each course (theory paper, sessional and practical work separately) and 40% marks in the aggregate in all the courses.
4. Due paper(s) will be applicable if a candidate obtains 40% marks in aggregate and fails in not more than three (3) papers (theory). Due paper(s) will be held along with the examination of the next year. The chance of due paper(s) will be given only 3 times.
5. Wherever a candidate appears at for a due paper examination he/she will do so according to the syllabus in force.
6. A candidate not appearing at any examination/absent in any paper of term end examination shall be deemed as fail.
7. A candidate will be placed in First Division if he/she secures 60% or more marks in aggregate in all the courses and in second division if he/she secures 50% or more marks but less than 60% marks in aggregate in all the courses.

   a. Where the candidate secures at least 40% marks in aggregate of all the courses he /she shall be deemed to have passed in each such course in which he/she has secured at least 40% marks.

   b. Where the candidate fails to secure 40% marks in aggregate of all the courses he/she shall be deemed to have passed in each such course in which he/she has secured at least 40% marks.

   c. If a candidate fails or does not appear in more than 50% of the courses prescribed for the examination he/she may be allowed to appear at a subsequent examination subject to the condition that he/she will have to appear and pass in all the courses.

   Provided that if a candidate clears any course after a continuous period of two years since he/she was admitted to the PGDCA then for the passing marks i.e. 40% marks shall be taken into account in the case of such course(s).

Provided further that in case where a candidate requires more than 40% marks in order to reach the requisite minimum aggregate as many marks, out of those actually secured by him/her will be taken into account as would enable him/her to make up the deficiency in the requisite minimum aggregate marks.

Candidates reappearing at an examination in a subsequent year shall be examined in accordance with the scheme and syllabi in force and shall be entitled to the award of the degree of year in which they clear the last failing/unclear paper.

Duration: 3 hours	Max Marks: 80

dca-101 Introduction to IT & PC Productivity Tools

Introduction to Computer: Definition, characteristics, classification of computers, analog computers, digital computers, hybrid computers, classifications of computers on the basis of size and speed, different types of computer generations of computers.

Computer Keyboard, pointing devices, mouse, track ball, touch pad, joysticks, touch-sensitive screens, pen based systems, digitizer, data scanning devices, optical recognition systems, barcode readers, optical mark readers, optical scanners, drum scanners, hand scanner, flatbed scanner, web camera, game pad, digital camera

Hard copy devices: Printer, impact printers, daisy wheel, dot matrix printer, line printer, chain printers, comb printers, non-impact printers, DeskJet, inkjet printers, laser printer, thermal transfer printer, barcode printers, Number systems, binary, octal, decimal, hexadecimal, addition, subtraction, multiplication. Computer Code: BCD, ASCII, EBCDIC code, excess-3 code, gray code. Software: User interface, systems software, programming software, application software. Logic gates and Boolean algebra representation and simplification by k Map.

Computer display, introduction memory, classifications, random-access memory, volatile memory, non-volatile memory, flash memory, read-only memory, secondary memory, the cache memory, auxiliary storage memory, memory hierarchy, storage devices, magnetic tape, magnetic disk, floppy disk, hard disks, CD, DVD, magneto optical. Application of computer: Desktop publishing, sports, design and manufacturing research and design, military, robotics, planning and management, marketing, medicine and health care, arts, communications, scientific, education.

Introducing LibreOffice, Introducing Writer, parts of the main Writer, creating, editing, formatting and working with styles, graphics and tables, printing, exporting, faxing and mailing documents.

Introducing Calc, entering, editing and formatting data, formulas and functions, using charts and graphs, using styles, printing data

Introducing Impress, using slide masters, styles, templates, adding and formatting texts and pictures, managing and formatting graphic objects, slide shows

Duration: 3 hours	Max Marks: 80

dca-102 Programming with C

Introduction to Programming Concepts: Software, Classification of Software, Modular Programming, Structured Programming, Algorithms and Flowcharts with examples.

Overview of C Language: History of C, Character set, C tokens, Identifiers, Keywords, Data types, Variables, Constants, Symbolic Constants , Operators in C, Hierarchy of Operators, Expressions, Type Conversions and Library Functions.

Managing Input and Output Operation: Formatted and Unformatted I/O Functions, Decision making, branching and looping: Decision Making Statements - if Statement, if–else statement, nesting of if-else statements, else–if ladder, switch statement,?: operator

Looping - while, do-while, for loop, Nested loop, break, continue, and goto statements. Functions: Function Definition, prototyping, types of functions, passing arguments to functions, Nested Functions, Recursive functions.

Arrays: Declaring and Initializing, One Dimensional Arrays, Two Dimensional Arrays, Multi-Dimensional Arrays - Passing arrays to functions. Strings: Declaring and Initializing strings, Operations on strings, Arrays of strings, passing strings to functions. Storage Classes - Automatic, External, Static and Register Variables.

Structures-Declaring and Initializing, Nested structure, Array of Structure, Passing Structures to functions, Unions, typedef, enum, Bit fields. Pointers – Declarations, Pointer arithmetic, Pointers and functions, Call by value, Call by reference, Pointers and Arrays, Arrays of Pointers, Pointers and Structures. Meaning of static and dynamic memory allocation, Memory allocation functions.

Duration: 3 hours	Max Marks: 80

dca-103 Electronic Data Processing

Concept of system, type of decision, information system, classification, conventional file system, object of database systems, data abstraction, data definition language, data manipulation language, database administrator. Database design stages, database model, database system architecture.
Entity relationship model, entities and entity sets their relationship, mapping constraints, generalization, aggregation, use of ER model for the design of databases, sequential, random, index sequential file organization.

Create a Table in MS Access -Data Types, Field Properties, Fields names, types, properties, default values, format, caption, validation rules Data Entry Add record delete recode and edit text Sort, find/replace, filter / select, re-arrange columns, freeze columns. Edit a Tables- copy, delete, import, modify table structure find replace.

Setting up Relationships- Define relationships, add a relationship, set a rule for Referential Integrity, change the join type, delete a relationship, save relationship Queries & Filter –difference between queries and filter, filter using multiple fields AND, OR, advance filter Queries create Query with one table, fiend record with select query, find duplicate record with query, find unmatched record with query, run query, save and change query.

Introduction to Forms Types of Basic Forms: Columnar, Tabular, Datasheet, Main/Subforms, add headers and footers, add fields to form, add text to form use label option button, check box, combo box, list box Forms Wizard, Create Template.

Introduction to Reports, Types of Basic Reports: Single Column, Tabular Report Groups/Total, single table report multi table report preview report print report, Creating Reports and Labels, Wizard

Duration: 3 hours	Max Marks: 80

dca-104 Programming in Java

The Java Language, The Key Attributes of Object-Oriented Programming, The Java Development Kit, The Java Keywords, Identifies in Java, The Java Class Libraries.

Java's Primitive Types, Literals, Variables, operators, Assignments, Type conversion, Program Control Statements, Input characters from the Keyword, if statement, Switch Statement, While Loop, do-while Loop, Use break, Use continue

Class Fundamentals, creating objects, Reference Variables and Assignment, Methods, Returning from a Method, Returning Value, Using Parameters, Constructors, Parameterized Constructors, The new operator Revisited, Garbage Collection and Finalizers, The this Keyword.

Arrays, Multidimensional Arrays, Alternative Array Declaration Syntax, Assigning Array References, Using the Length Member, Bitwise operators. String Fundamentals, String Constructors, Length() Method, Obtaining the characters within a string, String comparison, using indexOf() and lastIndexOf(), Changing the case of characters within a string, StringBuffer and String Builder.

Controlling Access to Class Members, Pass Objects to Methods, How Arguments are passed, Returning Objects, Method Overloading, Overloading Constructors, Recursion, Understanding Static, Introducing Nested and Inner Classes, Varargs: Variable-Length Arguments.

Inheritance Basics, Member Access and Inheritance, Constructors and Inheritance, Using super to Call Superclass constructors, Using super to Access Superclass Members, Creating a Multilevel Hierarchy, When are Constructors Executed, Superclass References and Subclass Objects, Method Overriding, Overridden Methods support polymorphism, Overridden Methods, Using Abstract Classes

Interface Fundamentals, Creating an Interface, Implementing an Interface, Using Interface References, Implementing Multiple Interfaces, Constants in Interfaces, Interfaces can be extended, Nested Interfaces Package Fundamentals, Packages and Member Access, Importing Packages, Static Import

The Exception Hierarchy, Exception Handling Fundamentals, The Consequences of an Uncaught Exception, using Multiple catch clauses, Catching subclass Exceptions, try blocks can be nested, Throwing an Exception, A Closer look at Throwable, using finally, using throws, Java's Built-in Exceptions.

Multithreading fundamentals, The Thread Class and Runnable Interface, Creating Thread, Creating Multiple Threads, Determining When a Thread Ends, Thread Priorities, Synchronization, using Synchronization Methods, The Synchronized Statement, Thread Communication using notify(), wait() and notify All(), suspending, Resuming and stopping Threads.

Enumerations, Java Enumeration are class types, The Values() and Valueof() Methods, Constructors, methods, instance variables and enumerations,

Applet basics, A complete Applet Skeleton, Applet Initialization and Termination, A key Aspect of an Applet Architecture, Requesting Repainting, using the status window, Passing parameters to Applets

Duration: 3 hours	Max Marks: 80

dca-105 Internet Tools

Internet- Evolution, Protocols, E-MAIL - Concepts, POP and WEB Based E-mail,merits, address,Basics of Sending & Receiving, E-mail Protocols, Mailing List, Free Emailservices.

INTERNET protocols – DataTransmission Protocols, Client/Server Architecture & its characteristics, FTP & its usages, Telnet Concept, Remote Logging, Protocols, Terminal Emulation, Massage Board, Internet chatting - Voice chat, text chat.

Word wide web (www) - History, Working, Web Browsers, its functions, Concept of Search Engines, Searching the Web, HTTP, URLs, Web Servers, Web Protocols, Web publishing - Concepts, Domain name Registration, Space on Host Server for Web site, HTML, Design tools, HTML editors , Image editors, Issues in Web site creations & Maintenance,.

HTML - Concepts of Hypertext, Versions of HTML, Elements of HTML syntax, Head & Body Sections, Building HTML documents, Inserting texts, Images, Hyperlinks, Backgrounds and Color controls, Different HTML tags, Table layout and presentation, Use of font size & Attributes, List types and its tags, Use of Frames and Forms in web pages.