PGDCA 101 : Computer Fundamentals

Time 3.00 Hours  Max. Marks : 100  Min. Passing Marks : 40

UNIT 1 - Computer system concepts, Computer system characteristics, Capabilities and limitations, Types of computers: Analog, Digital, Hybrid, General, Special Purpose, Micro, Mini, Mainframe, Super. Basic components of a computer system - Control unit, ALU, Input/Output functions and characteristics, memory - RAM, ROM, EPROM, PROM and other types of memory. Data representation and codes, Decimal, Binary, Octal and Hexadecimal System and inter conversion, BCD numbers and ASCII codes.


UNIT 4 - Computer applications, Office automation, Industrial applications, CAD/CAM, Library information system, Digital image processing, Multimedia applications, Space research.


Reference:
1. Introduction to Computers
2. Fundamentals of Computers
3. IT Today
4. Computers Today
5. Fundamentals of Information Technology

C. Xavier 2nd Edition, New Age International
V. Rajaraman 2nd Edition, Prentice Hall of India
S. Jaiswal Galgotia Publication
S.K Basandra, Galgotia Publications
Alexis Leon & Mathews Leon, Vikas Publishing House, New Delhi
Jiwaji University, Gwalior -- PGDCA – Session 2011-12

PGDCA102 : Application Software Packages

Time 3.00 Hours Max. Marks : 100 Min. Passing Marks : 40

UNIT – I

MS Windows: Introduction to M.S. Windows; Features of Windows; Various versions of Windows & its use; Working with Windows; My Computer & Recycle bin; Desktop, Icons and Windows Explorer;
Screen description & working styles of Windows; Dialog Boxes & Toolbars; Working with Files & Folders; Shortcuts & Autostarts; Accessories and Windows Settings using Control Panel; Start button & Program lists; Installing new Hardware & Software.

UNIT – II

Basics Of word:

Advanced Formatting Techniques in Word :
Formatting Pages; Formatting Sections, Creating and Modifying Page Numbers, Creating Headers and Footers, Taking Care of Loose Ends. Working With Columns ; Working With Newspaper Columns, Revising Column Structure, Constructing High-Quality Tables ; Creating and Revising Tables, Modifying Table Structure, Formatting Tables, Using Tables Calculatingly. Working Smarter with Word ; Using Templates. Creating Outlines in Word ; Creating an Outline, Modifying an Outline

UNIT – III

Access Concepts & terms : database tables, relational databases, records, fields, controls & objects, queries & dynase, forms, reports, properties, wizards, macros, Access requirements, starting & quitting access, the access workspace & tool, views.
Creating database & tables with & without wizard, field name, data types & properties, adding & deleting fields in fields, renaming fields & their caption, resizing fields, freezing columns, primary key field & indexing fields.
Reports : Creating reports, previewing reports, printing reports, modifying, saving.
Relational databases – definition, purpose, creation, viewing, deleting. Expressions, Macros.

UNIT – IV
Creating Excel Worksheets:
Entering and Editing Cell Entries; The excel Application Window, Workbooks and Worksheets, Moving the Cell Pointer, Entering Text and Numbers, Revising Text and Numbers, Working with Numbers; Creating Formulas, Formatting numbers, Changing Worksheet Layout; Adjusting Column Width and Row Height, Inserting and Deleting Rows and Columns, Inserting and Deleting Cells, Moving and Copying Cell Contents, Naming a Worksheets, Selecting Worksheets, Copying and Moving Worksheets, Inserting and Deleting Worksheets, Other Formatting Options, Aligning Text, Border and Color, Printing in Excel; Print Preview, Changing Page Setup, Checking Worksheet Spelling.

Advanced Techniques in Excel:
Using Functions and References; Using Functions, Entering Functions, Relative and Absolute Cell References, Naming Ranges; Naming Ranges, Using Names, Creating Easy-to-Understand Charts; Pie Charts, Series Charts, Creating Charts, Moving, Sizing, and Printing Chart Objects, Editing and Formatting Charts; Adding a Data Series, Deleting a Data Series, Modifying and Formatting Charts.

UNIT V

Creating PowerPoint Presentations:
Creating a Basic Presentation, Building Presentations, Modifying Visual Elements, Formatting and Checking Text, Adding Objects, Applying Transitions, Animation Effects and Linking, Preparing Handouts, Taking the Show on the Road.

Reference:
1. Microsoft Office 97, Will Train, Gini Courter, Annette Marquis, bp Publication.
PGDCA 103 : Programming in 'C'

Time 3.00 Hours  
Max. Marks : 100  
Min. Passing Marks : 40


UNIT 2-Programming in C including features of 'C', C, Tokens, Variables, Expressions, Identifiers, Keywords, Data Types, Constants, Operator and expression Operator: Arithmetic, Logical, Relational, Conditional and Bitwise Operators, Precedence and Associativity of Operators, Type conversion in expression, Basic input/output and library functions: Single character input/output i.e. getch(), getchar(), getc(), putc(),_formatted input output i.e. printf() and scanf().

Branching Constructs: if-else, switch, conditional operator & goto statements
If statement, Else statement, Nested of If...Else Statement, else if ladder, The ? operator, goto statement, Switch statement, Compound statement, Loop controls, for, while, do-while loops, break, continue, goto statement.

UNIT 3- Functions: categories of functions User defined and library function, recursion, Function arguments, Return values and nesting of function, Recursion, Calling of functions, Scope and life of variables - local and global variable, Storage class specified - auto, extern, static, register.

Arrays: what is array, declaring initializing, 2D and 3D array. String: declaration, string functions - strcat, strcp, strcsp, strlen, strcstr.

UNIT 4-Pointers: operations on pointers, Pointers Array of pointers, Pointer and strings, Pointer to structure, Pointers within a structure, The preprocessor, define, defining functions like macros, #error, #include, conditional compilation directives i.e. #if, #else, #elif and #ifdef & #undef. Structures: the concept of structure of structure, initializing a structure, the structure tag, period operator, array of structure, structure and pointer, le arrow operator and nesting of structure, Unions: initialization and use of it in a program.

UNIT 5-File Management: Introduction - File handling, File structure, File handling function.
File types, Streams, Text, Binary, File system basics, The file pointer. Opening a file, Closing a file, Writing a character, Reading a character, Using fopen(), getc(), putc(), and fclose(), Using fread(), Working with string fputs() and fgets(), Standard streams in C. Flushing stream, Using fread() and fwrite(), Direct access file, fseek() and random access I/O: fprintf() and fscanf(), Command line arguments

Reference:
1. Let us C  
2. Programming in ANSI C  
3. C Programming  
4. The spirit of C  
5. Programming with ANSI & Turbo C  

Yashwant Kanitkar, BPB Publication
Balguruswamy Tata McGraw Hill
Schaum's series
Mulish Cooper, Jaico Publishing
Kamthane, Pearson Education.
PGDCA 104: Computer Organization and Architecture

UNIT 1: Component of computer system, number system, binary, octal, hexadecimal conversion, 1’s compliment and 2’s compliment, binary arithmetic - addition, subtraction, character codes (ASCII, EBCDIC). Error detection and correction codes.

UNIT 2: Boolean Algebra - Representation of values and complement, AND, OR, NOT operators, d’morgan’s theorem, simplifying expressions, truth table, logic gate: AND, OR, NOT, NAND, NOR, XOR, XNOR and karnaugh map method, combination logic design.


UNIT 4: Control Unit - Its purpose, instruction word, instruction cycle. I/O devices - Printers: Dot matrix, Electro magnetic, Thermal, Laser, CRT’s, Keyboards.

UNIT 5: Memory - Main, Ram, Static & Dynamic, ROM, EPROM, cache memory. Auxiliary storage - floppy disk, introduction to microprocessor, interfacing buses, bus formats, address, data and control.

Reference:
1) Digital computer fundamental - Thomas C Bartee
2) Computer system architecture - M. M. Mano
3) Computer fundamentals (architecture & organization) B. Ram.
UNIT 1 - Overview of Systems Analysis and Design: Systems Development Life Cycle. Concept and Models: requirements determination, logical design, physical design, test planning implementation planning & performance evaluation, communication, interviewing, presentation skills, group dynamics, risk and feasibility analysis, group-based approaches.

UNIT 2 - JAD, structures walkthroughs, and design and code reviews; prototyping; database design, software quality metrics; application categories software package evaluation and acquisition.


UNIT 4 - Systems Design: Design of input and control, design of output and control, file design/database design, Process design, user interface design; prototyping; software constructions; documentation.

UNIT 5 - Application Development Methodologies and CASE tools: Information engineering, structured systems analysis and design and object oriented methodologies for application development data modelling, process modeling, user interface design and prototyping; use of computer aided software engineering (CASE) tools in the analysis, design and implementation of information systems.

Reference: