



MAHARAJA KRISHNAKUMARSINHIJI BHAVNAGAR UNIVERSITY

NAAC Accreditation Grade "B"

(With effect from Academic Year 2014-2015)

Academic Council: 23 / 11 / 2013, R.No. (2)

S.Y. B.Sc INFORMATION TECHNOLOGY

PAPER NO	NAME OF THE PAPER	MARKS
IT - 201	OBJECT ORIENTED PROGRAMMING WITH C++	100
IT - 202	DATA STRUCTURE AND ALGORITHMS	100
IT - 203	DTP (DESKTOP PUBLISHING)	100
IT - 204	VISUAL PROGRAMMING USING .NET	100
IT - 205	SYSTEM ANALYSIS AND DESIGN	100
IT - 206	PRACTICAL & VIVA	100
IT - 207	PRACTICAL & VIVA	100



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Paper No-IT-201: OBJECT ORIENTED PROGRAMMING WITH C++

Total Marks: 100

UNIT	Detail syllabus	Marks / Weightage
Unit - 1	<ul style="list-style-type: none">❖ Introduction to POP and OOP❖ Characteristics of POP and OOP❖ Application of OOP❖ Data Types, Variables, Constants, Expression, Statements and operators, Structure and Function in C++.	20
Unit – 2	<ul style="list-style-type: none">❖ Basic concepts of OOP❖ Declaration of Classes and Objects❖ array of objects❖ I/O Statement❖ Function: Member, Friend, Inline.	20
Unit - 3	<ul style="list-style-type: none">❖ Concept of operator overloading❖ Over loading unary and binary operators❖ Overloading of operators using friend function and member function❖ Manipulation of string using operators❖ Rules for operator overloading❖ Type conversions	20
Unit – 4	<ul style="list-style-type: none">❖ Inheritance❖ Types of inheritance❖ Virtual base class❖ Abstract class❖ Constructors in derived class❖ Nesting of classes❖ *this Pointer.	20
Unit - 5	<ul style="list-style-type: none">❖ File stream classes❖ Opening and closing a file❖ Error handling❖ File modes❖ File pointers❖ Sequential I/O operations❖ Updating a file (Random access)❖ Command line arguments❖ Exception handling.	20

Reference books:

1. Object Oriented Programming with C++, E.Balaguruswamy, BPB.
2. Object Oriented Programming with C++, RobaretLaphore.
3. Let us C++, YashvantKanitkar, BPB.
4. OOP by Timothy Budd, TMG
5. OOP by Bahrami
6. OOP in C++ by Nabajyoti Barkakati, Prentice-Hall of India.



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Paper No-IT-202: DATA STRUCTURE AND ALGORITHMS

Total Marks: 100

UNIT	Detail syllabus	Marks / Weightage
Unit - 1	<ul style="list-style-type: none">❖ Introduction to data structure❖ Definition of a data structure❖ Primitive and Composite data types represent Data Structure.	20
Unit – 2	<ul style="list-style-type: none">❖ Arrays, Constructor and Destructor❖ Searching methods (Sequential, Binary)❖ Array sorting methods(selection, bubble sort, Heap, Quick)❖ Stacks: applications of stack, infix to postfix conversion, recursion, queues operations on queues	20
Unit - 3	<ul style="list-style-type: none">❖ Linked list operations❖ Application❖ Representation of a polynomial❖ Types of linked list❖ Represent stack and queue using linked list.	20
Unit – 4	<ul style="list-style-type: none">❖ Trees and graphs: binary trees, conversion of forest to binary tree, operations, tree traversals, graph definition, types of graphs, traversal shortest path.	20
Unit - 5	<ul style="list-style-type: none">❖ Algorithm: introduction and definition, examples, conditional and repeat statements, Dynamic Algorithms, Games.	20

Reference books:

- 1 Fundamentals of data Structures in C++ - E.Horowitz and S.Shani, 1999, - Galgotia Pub.
- 2 Computer Algorithms - Horowitz, S. Sahni, and S. Rajasekaran - Galgotia Pub. Pvt. Ltd., 1998.
- 3 Data Structures and Program design in C - R. Kruse C.L. Tondo and B. Leung - PHI, 1997.
- 4 Data Structures A Pseudocode Approach with C++ - Richard F.Gilberg, Behrouz A.Forouzan, 2002 - Thomson Brooks / Cole.
- 5 Data Structures, Algorithms and Applications on C++ by Sartaj Sahani.
- 6 Data Structures and Algorithms in C++ by Goodrich, John Wiley and Sons.

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Paper No-IT -203: DTP (DESKTOP PUBLISHING)

Total Marks: 100

UNIT	Detail syllabus	Marks / Weightage
Unit - 1	<p><u>Introduction to Multimedia and DTP</u></p> <ul style="list-style-type: none"> ❖ Introduction to multimedia, basics of multimedia. ❖ Color models-An overview, primary & secondary color models. ❖ Multimedia presentation-Images, pictures, text, animation, audio, video. ❖ Elements of multimedia – Microphone, amplifier, loudspeakers, commonly used connectors. ❖ Introduction to various DTP packages, Features of DTP packages ❖ Comparison between word processing packages and DTP packages ❖ Advantages and disadvantages of DTP, Applications of DTP 	20
Unit – 2	<p><u>Working with Photo Shop</u></p> <ul style="list-style-type: none"> ❖ Photoshop-History & introduction, the file menu, the tools, Drawing lines & shapes. ❖ Inserting picture and shapes, filling colors, text effects. ❖ Selecting Image Areas- The Rectangular and Elliptical Marquee Tools, The Lasso Tools, Saving Selections, The Magic Wand Tool, The Magnetic Lasso Tool, Modifying Selections. ❖ Working with layers- Creating layers, Transforming layers, Copying layers between Images, Arranging layers, filters ❖ Creating design patterns, Photoshop presentations -static & dynamic presentation, ❖ Creating animations using image ready, creating animations & presentations, Tips and tricks in Photoshop. 	20
Unit - 3	<p><u>Designing using Corel draw</u></p> <ul style="list-style-type: none"> ❖ Corel draw –An overview, menus and tools. ❖ Drawing–lines, shapes, inserting-pictures, objects, tables, templates ❖ Adding special effects, Text, layer effects, and filters, Exporting drawings, outlining & filling objects, inserting symbols & Clip arts. ❖ Working in Corel draw presentation–adjusting the position, resizing, positioning, merging, color shades & shadows .working with advanced effects, special interactive effects. ❖ Creating- business cards, pamphlets, banners, news papers, books. Shortcut keys in Corel draw. 	20
Unit – 4	<p><u>Page Maker</u></p> <ul style="list-style-type: none"> ❖ Page maker- An introduction, basics menus & tools ❖ Guides & rulers. Drawing tools. Fills & outlines. ❖ Working with- text, paragraphs, tabs & indents, graphics, tables. ❖ Importing & exporting, story editing & printing, shortcut keys ❖ Creating book works-introduction-building booklets, completing the book. 	20



Unit - 5	<p><u>Printing & Publishing</u></p> <ul style="list-style-type: none">❖ Introduction, types of printing -Letterpress printing-lithography-offset printing- diff❖ erent printing process-machines for letterpress, offset, gravure, flexography and screen printing-printing materials.❖ Planning a printing, design factors, color application-film assembly and plate making-binding & finishing.❖ Image editing, color correction, color management, poly master, methods of color proofing.❖ Different types of font, text file formats, vector & raster graphics,❖ Page setting, character & paragraph formatting, indentation, alignments, hyphenation, single & double sided documentation	20
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Reference books:

- 1 Desktop publishing by computer world
- 2 Photoshop 6 for Dummies by Deke McClelland,
- 3 M.Sc software engineering by G. Dalin. HSI PUBLICATIONS
- 4 CorelDraw! For Dummies by Deke McClelland
- 5 Adobe Page Maker 7.0, Adobe Press.
- 6 Dictionary of Printing & Publishing by Collin P H, Ubs Publishers' Distributors (p) Ltd.



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Paper No-IT -204: VISUAL PROGRAMMING USING. NET

Total Marks: 100

UNIT	Detail syllabus	Marks / Weightage
Unit - 1	<u>Introduction</u> <ul style="list-style-type: none">❖ The .NET framework & Common Language Runtime❖ .Net Assembly❖ Visual Basic Language – Operators, Conditions & Loops❖ Procedures & Functions, Understanding Scope, Exception handling❖ Console application development	20
Unit – 2	<u>Getting Started with VB .NET</u> <ul style="list-style-type: none">❖ Concept of event handling❖ Creating forms in application❖ Basic Controls– Text Boxes, Rich Text Boxes, Labels & Link Labels etc❖ Other common controls – Buttons, Check Boxes, Radio Buttons, List Boxes, Combo Boxes, Scrollbars & Timers etc.	20
Unit - 3	<u>Advance .Net Controls</u> <ul style="list-style-type: none">❖ Picture box, Month and Calendar❖ Built in Dialog box❖ Track bar, Splitter❖ Notify Icon, Tools Tip, Menu etc❖ Progress Bar	20
Unit – 4	<u>Object Oriented Programming</u> <ul style="list-style-type: none">❖ Classes & Objects❖ Fields, Properties, Methods & Events❖ Abstraction, Encapsulation, Inheritance & Polymorphism❖ Overloading, Overriding & shadowing❖ Constructors & Destructors	20
Unit - 5	<u>Database Access with ADO .NET</u> <ul style="list-style-type: none">❖ Accessing data with Server Explorer❖ Accessing data with Data Adaptors & Datasets❖ Working with ADO .NET and Database Binding Controls❖ Concept of Dataset, Data Tables and Database programming using code.❖ Report Generation using crystal report.	20

Reference books:

1. Steven Holzner: Visual Basic .NET Programming Black Book DeramTech Press. (With CD)
2. ROD STEPHENS: VISUAL BASIC 2005 PROGRAMMER'S REFERENCE KOGENT SOLUTIONS
3. INC.: VISUAL BASIC 2005 WITH .NET 3.0 FRAMEWORK IN SIMPLE STEPS.
4. .NET 4.0 programming 6-in-1, with CD, by Kogent learning Soln Inc., Dreamtec Press.

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Paper No-IT-205: SYSTEM ANALYSIS AND DESIGN

Total Marks: 100

UNIT	Detail syllabus	Marks / Weightage
Unit - 1	<p><u>System Concepts</u></p> <ul style="list-style-type: none"> ❖ Introduction to System, Characteristics & Elements of system. ❖ Major System concepts and Types of System. ❖ System Analysis, Role of System Analyst and users ❖ Information & Information System. ❖ Role of Business Information System in Organization. 	20
Unit – 2	<p><u>System Development Life Cycle (SDLC)</u></p> <ul style="list-style-type: none"> ❖ Requirement analysis and Determination ❖ System Design Technique ❖ System Development ❖ System Testing ❖ System Implementation and Evaluation. 	20
Unit - 3	<p><u>Structured System Analysis and Design Method</u></p> <ul style="list-style-type: none"> ❖ Need of Structured Analysis and Design ❖ System survey, ❖ Structured analysis, ❖ Structured design ❖ Advantage of SSADM. 	20
Unit – 4	<p><u>Input / Output Design, Fact Gathering Techniques Testing and implementation</u></p> <ul style="list-style-type: none"> ❖ Input - Data capture objectives, Data verification and validation, Interactive screen design. ❖ Output - Design principles of output, Output objectives, ❖ Fact Gathering Techniques–Interviewing, Questionnaires, Record inspection, Observations. ❖ Testing Techniques ❖ Implementation Method 	20
Unit - 5	<p><u>Analysis and Design Tools</u></p> <ul style="list-style-type: none"> ❖ DFD: Logical and Physical DFD ❖ Decision tables ❖ Decision Tree ❖ Data Dictionary ❖ HIPO chart and Structured English 	20

Reference books:

1. James A. Senn: Analysis & Design of Information System 2nd Edition McGraw-Hill International Edition.
2. S. Parthasarthy & B. W. Khalkar: System Analysis & Design 1st Edition, Master Ed. Cons.
3. Yourdon E. and Constantine L. L: Structured Analysis & Design Yourdon press NY.



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Paper No-IT-206: PRACTICAL & VIVA

Total Marks: 100

No	Detail syllabus	Marks / Weightage
1	Paper No. 201	50
2	Paper No. 202	50

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Paper No-IT-207: PRACTICAL & VIVA

Total Marks: 100

No	Detail syllabus	Marks / Weightage
1	Paper No. 203	50
2	Paper No. 204	50