

Bhavnagar University
S.Y.B.C.A.

Paper No: BCA-201 Communicative English - II

100 Marks

Unit-1: Reading Skill

- ❖ How to read magazines, news papers.
- ❖ How to make choice with magazines/articles
- ❖ Select popular items like sports, cinema, fashion, food
- ❖ Vocabulary

Unit-2: Writing Skill

- ❖ How to get information from articles
- ❖ How to make notes
- ❖ Writing to letter to the editor of a news paper
- ❖ Organizing opinions and against. Explain how to arrange debates issues in writing

Unit-3: Dictionary Skill

- ❖ How to read a dictionary
- ❖ How to read an advertisement
- ❖ How to select a book
- ❖ Preparing a library card
- ❖ Reading a blurb
- ❖ Skimming through book

Unit-4: Making notes from informative texts

- ❖ Characteristics of good notes
- ❖ Abbreviations
- ❖ How to focus subject in the given text

Unit-5: Language Skill & Speech improvement

- ❖ How to learn correct pronunciation
- ❖ English vowels & consonants, Stress the nucleus, the tone groups

Reference Books...

1. Nirmla Bellre: Reading & study strategies, Oxford University Press
2. S.R.Inthira & V. Sarswathi: Enrich your English (Academic skill work book), CIEFL, Oxford University press

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Paper No: BCA-202 Object Oriented Programming

100 Marks

Unit-1: Fundamentals of Programming

- ❖ Concept of Procedural, Structural and Object Oriented Programming.
- ❖ History of C++ and its Object Oriented Techniques.
- ❖ Comparison of Object – Oriented Programming over Procedural languages
- ❖ Data Types, Variables and Constants Expression and Statements and all types of operators.

Unit-2: OOP Overview

- ❖ Classes and Objects.
- ❖ Concept of Data Encapsulation, Data Hiding, Inheritance and Polymorphism.

Unit-3: Inheritance

- ❖ Inheritance.
- ❖ Object Inheritance.
- ❖ Class Inheritance.
- ❖ Multiple Inheritances.

Unit-4: Concepts of OOP

- ❖ Constructors & Destructor
- ❖ Inline Functions.
- ❖ Friend Functions.
- ❖ Virtual Functions.

Unit-5: File Handling

- ❖ Concepts File Handling in C++, Streams, I/O Classes.
- ❖ Uses of Text Files, Advantages & Disadvantages.

Reference Books...

- 1 E.Balaguruswami : Object Oriented Programming with C++ Mc Graw-Hill
- 2 Robert Lafore : Object Oriented Programming with C++ Gagotia Pub.
- 3 Rajaraman : Object Oriented Programming with C++ New age International

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Paper No: BCA-203 Visual Programming

100 Marks

Unit-1: Visual Basic Overview and Introduction

- ❖ Introduction to integrated development environment.
- ❖ Menu bar, Toolbar, Project explorer, Toolbox & properties.
- ❖ Introduction to application wizard.
- ❖ How to manage V.B. Project & Forms.
- ❖ Introduction to Method & Events.
- ❖ Declaration of variable, types of variable, constant, procedures, subroutines, functions.
- ❖ Control flow statement, loop statement, Iteration.
- ❖ Designing menus, shortcut keys, manipulating menus at run time.
- ❖ Active X control: Textbox, Combo box, Command button, Option button, List box, Scroll bar, Label, Timer etc.
- ❖ Advance Active X Control: File Control, Rich text box, Msflexgrid, Dtpicker.

Unit-2: Multiple Document Interface (MDI) & Graphics with Visual Basic

- ❖ Introduction to MDI Form.
- ❖ MDI built in capabilities.
- ❖ Introduction to Image box, Picture box & Auto shape control.
- ❖ The Drawing Method.

Unit-3: Database programming with visual basic.

- ❖ Client server programming concepts
- ❖ Using ADO for database connectivity
- ❖ Database programming using SQL.
- ❖ Create, add calculated fields and generate Data Report with Criteria

Unit-4: Error Handling & Visual Basic with Internet.

- ❖ How to handle errors in project.
- ❖ Error handling methods: On error go to Label, On error go to line#, On error resume next.
- ❖ Getting an error using error code & error description.
- ❖ Creating a web browser.
- ❖ Working with Email using MAPI Controls: Sending email, reading email.

Unit-5: VB.NET Platform

- ❖ Overview to VB.Net : Extra features, Concept of Event Procedures, Properties, and Controls
- ❖ Writing a Simple Programming Using VB.Net
- ❖ Data access Using ADO.Net

Reference Books...

1. Steven Holzner: Visual Basic 6.0 Programming Black Book: DreamTech Publication.
2. Breadyly : Programming VB 6.0. TMH Pub.
3. Jeffrey Kent: Visual Basic .NET A Beginner's Guide, TMH
4. Professional VB.Net . Wrox Press Limited.

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Paper No: BCA-204 Data Structures

100 Marks

Unit-1: Introduction to Data Structures

- ❖ Data Types: Primitive and composite
- ❖ Logic and Control Structures
- ❖ Time and Space efficiency of Algorithms

Unit- 2: Data Structures

- ❖ Linear and List structure: Array, stacks, Queues and Lists
- ❖ Variation in linked list: Singly, Circular, Doubly Linked List, Simple List, Inverted List.
- ❖ Operation and Applications of all above structure> Arrays, Multidimensional array, Spares Matrices.
- ❖ Operation and application of queued.

Unit- 3 Non Linear Structure

- ❖ Introduction of Trees structure.
- ❖ Introduction to graph.
- ❖ Binary Tree.
- ❖ Tree Traversal Algorithms.
- ❖ Storage structure for graphs.
- ❖ Simple algorithm on graphs.

Unit-4 Sorting searching & merging Techniques.

- ❖ Sorting Techniques: Bubble, Insertion, Selection, Shell, Quick.
- ❖ Searching Techniques: Sequential, Binary and Binary tree.
- ❖ Merging Techniques.

Unit-5 Introduction to File Structure

- ❖ Storage device and their Characteristics.
- ❖ Concepts of field record and file
- ❖ Fixed and variable length record.
- ❖ Primary and Secondary key.

Reference Books...

1. Bhagat Singh and Thomas Naps: Introduction to Data Structure Data McGraw- Hill publishing Co. Ltd.
2. Tremblay J and Sorenson P.G. : An Introduction to Data Structure with application 2nd Edition McGraw- Hill International Edition.
3. Introduction to Data Structure : Schaum Series Publications.

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Paper No: BCA-205 System Analysis & Design

100 Marks

Unit-1: System Concepts

- ❖ What is System?
- ❖ Characteristics & Elements of system.
- ❖ Major System concepts.
- ❖ Types of System.
- ❖ What is System Analysis?
- ❖ System Analyst.
- ❖ Information & Information System.
- ❖ Role of Business Information System in Organization.

Unit-2: System Development Life Cycle (SDLC)

- ❖ What is SDLC?
- ❖ Stages of System Analysis - Problem Identification, Feasibility study and cost benefit analysis, System requirement analysis, System design specification & programming, Testing & Implementation, Follow-up maintenance, Evaluation of the system.

Unit-3: Structured System Analysis and Design Method

- ❖ Need of Structured Analysis and Design
- ❖ What is SSADM?
- ❖ SSSADM Methodology - System survey, Structured analysis, Structured design, Advantage of SSADM.

Unit-4: Input / Output Design & Fact Gathering Techniques

- ❖ 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.

Unit-5: DFDs & other tools

- ❖ What is DFDs ?
- ❖ Symbols used in DFDs.
- ❖ Construction a DFD with illustration.
- ❖ Physical & Logical DFDs.
- ❖ Decision tables
- ❖ HIPO chart
- ❖ Structured English

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: BCA-206 Operating System

100 Marks

Unit-1: Introduction to operating systems

- ❖ What is operating system?
- ❖ Function of operating systems.
- ❖ Evolution of operating system.
- ❖ Introduction to basic terms & batch processing system: Jobs, Processes files, command interpreter.
- ❖ Different types of operating system-real time systems, multi-user System, distributed system.
- ❖ Operating system structure-monolithic layered, virtual machine & Client server.

Unit-2: Memory Management

- ❖ Logical & Physical address, protection, paging, segmentation.
- ❖ Virtual memory.
- ❖ Page replacement algorithms.
- ❖ Cache memory, hierarchy of memory types.
- ❖ Associative memory.

Unit-3: Process Scheduling

- ❖ Process states, virtual processor.
- ❖ Interrupt mechanism.
- ❖ Scheduling algorithms.

Unit- 4: File and I/O Management

- ❖ I/O Hardware, I/O Drivers
- ❖ DMA controlled I/O & programmed I/O
- ❖ I/O Supervisors.
- ❖ File systems-Partitions & Directory structure
- ❖ Disk space allocation
- ❖ Disk scheduling

Unit-5 Concept of Unix & Linux

- ❖ Shell and Kernel
- ❖ Unix Basic Commands

Reference Books...

1. Peterson J and Silberchez A: Operating System Concepts Wesley.
2. Batch J: The design of Unix OS , PHI
3. Book-Unofficial Guide to ethical hacking-By Ankit Fadia-MacMillan , ISBN

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Paper No: BCA-207 Practical

100 Marks

Unit-1: Practical of "C++" Language	[40]
Unit-2: Practical of VB Language	[30]
Unit-3: Practical of Data Structure (Using C)	[30]