

BCA III YEAR						
S.No	PAPER	TITLE	Assignment Marks	UNIVERSITY EXAM MARKS	DURATION OF EXAM	TOTAL MARKS
1	BCA-301	OPERATING SYSTEMS	20	80	3	100
2	BCA-302	COMPUTER NETWORKS	20	80	3	100
3	BCA-303	PROGRAMMING WITH JAVA	20	80	3	100
4	BCA-304	ELECTIVE I a. Computer Organization b. Artificial Intelligence c. Computer Aided Modeling	20	80	3	100
5	BCA-305	ELECTIVE II a. E-Commerce b. Distributed Database c. Network Security	20	80	3	100
6	BCA-306P	JAVA LAB	20	80	3	100
7	BCA-307P	SOFTWARE LAB – III	20	80	3	100
8	BCA-308P	PROJECT WORK	50	150	3	200
TOTAL:						900

**BACHELOR OF COMPUTER APPLICATIONS (BCA) III YEAR SYLLABUS
EFFECTIVE FROM THE ACADEMIC YEAR 2010 - 2011.**

BCA - 301: OPERATING SYSTEMS

UNIT – I: Overview of operating systems - functionalities and Objectives of OS. Processor Registers, Instruction Execution, Interrupts, Types of Interrupts

UNIT – II: Process management, process concepts: - Process States, Process Control Block, Process and Threads, Processor Scheduling, Scheduling algorithms,

UNIT – III: Principles of Concurrency - critical sections -. Mutual exclusion - process co-operation, I.P.C.

Deadlock:- prevention, detection, avoidance, dining Philosophers' Problem

Semaphores: definition, init, wait, signal operations. Monitors, Message Passing, .

UNIT – IV: Memory management: Virtual memory concepts- paging and segmentation, address mapping. Virtual storage management, page replacement strategies.

UNIT – V: File organization: - blocking and buffering, file descriptor, File and Directory structures, I/O Devices, Disk Scheduling .

Security: - Security Threats, Protection, Trusted Systems, Windows Security.

Text Book

William Stallings, Operating Systems, Prentice Hall.

Unit-I:- Chapter 1.2, 1.3, 1.4, 2.1

Unit-II: - Chapter 3.2, 4.1, 9.1, 9.2

Unit-III:- Chapter 5.1 to 5.5, 6.2, 6.3, 6.4

Unit-IV:- Chapter 7.2, 7.3, 7.4,

Unit-V:- Chapter 11.5, 12.2, 12.3, 12.4,16.1, 16.2, 16.5, 16.6

Reference books:

Abraham Silberschatz, Peter B. Galvin, Greg Gagne, Operating System Concepts. Sixth edition. Addison-Wesley (2003).

Andrew Tanenbaum, Modern Operating Systems, Prentice Hall.

Harvey M. Deitel, An introduction to operating systems. Addison-Wesley.

**BACHELOR OF COMPUTER APPLICATIONS (BCA) III YEAR SYLLABUS
EFFECTIVE FROM THE ACADEMIC YEAR 2010 - 2011.**

BCA – 302: COMPUTER NETWORKS

UNIT I :

Introduction, Network models – Internet model, OSI model.

Physical Layer: Signals – Analog, Digital, Digital Transmission – Coding, Sampling, Analog Transmission - Modulation of digital and analog signals, Telephone modem, Multiplexing, Transmission media

UNIT II :

Data Link Layer: Error detection and correction, Data link control and Protocols - Stop and wait, Go-back-n, Selective repeat. Channelization.

Wired LANS – Traditional Ethernet, Fast Ethernet, Gigabit Ethernet, Wireless LAN's – IEEE-802.11, Bluetooth. Connecting devices.

UNIT III:

Network Layer: Inter-networks, Addressing, Routing-Introduction, unicast, multicast, Network layer Protocols – ARP, IP, IPv6,

UNIT IV:

Transport Layer: Process- to- Process delivery, Data traffic, Congestion and Control, Quality of service (QOS) and techniques to improve QOS.

Security: Introduction, Symmetric- key cryptography, Public key cryptography, Message security, Digital signature, User authentication, Firewalls.

UNIT V:

Application Layer: Client- Server model,

Domain name system-domain name space, distribution of name space, DNS in internet

Electronic mail, SMTP, File Transfer, FTP, HTTP, World Wide Web.

Multimedia –fundamentals, Streaming audio/video - stored and live, Real time interactive audio/video.

Text book:

Data communication and Computer Networks by Forozoun 3rd edition.

UNIT-1: Chapters-1,2,3,4,5,6,7.

UNIT-2: Chapters-10,13,14,,15,16

UNIT-3: Chapters-19,21

UNIT-4: Chapters-23, 29,30.1 to 30.3

UNIT-5: Chapters-24.1,25,26,27,28.1,28.3,28.4,28.5.

Reference Books:

Computer networks by Tanenbaum

**BACHELOR OF COMPUTER APPLICATIONS (BCA) III YEAR SYLLABUS
EFFECTIVE FROM THE ACADEMIC YEAR 2010 - 2011.**

BCA – 303: PROGRAMMING WITH JAVA

Unit – 1: Java Fundamentals

Fundamentals of Object Oriented programming: Object Oriented paradigm – Basic concepts of Object Oriented Programming – Benefits of OOP – Applications of OOP.

Java Evolution: Java Features – How Java differs from C and C++ - Java and Internet – Java and World Wide Web – Web Browsers – Hardware and Software Requirements – Java Environment. Overview of Java Language: Simple Java Program – Java Program Structure – Java Tokens- Java Statements – Implementing a Java Program – Java Virtual Machine – Command Line Arguments.

Constants, Variables and Data types: Constants – Variables – Data types – Declaration of Variables- Giving Values to variables- Scope of Variables-Symbolic Constants-Type Casting.

Unit – 2: OOPS Concepts in Java

Operators and Expressions: Arithmetic Operators – Relational Operators- Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operators – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Operators – Operator Precedence and Associativity.

Decision Making and Branching: Decision Making with If statement – Simple If Statement-If else Statement-Nesting If Else Statement- the Elseif Ladder-The switch Statement – The ?: operator.

Decision Making and Looping: The while statement – The do statement – The for statement – Jumps in Loops.

Class , Objects and Methods: Defining a Class – Fields Declaration – Methods Declaration – Creating Objects – Accessing class members – Constructors – Methods Overloading – Static Members – Nesting of Methods – Inheritance – Overriding Methods – Final Variables and Methods – Final Classes – Abstract Methods and Classes – Visibility Control.

Unit – 3: Packages and Interfaces in Java

Arrays, Strings and Vectors: One-dimensional Arrays-creating an Array – Two dimensional Arrays – Strings – Vectors – Wrapper Classes – Enumerated Types.

Interfaces: Multiple Inheritance : Defining Interfaces – Extending Interfaces – Implementing Interfaces – Accessing Interface Variables.

Packages: Java API Packages – Using system Packages – Naming Conventions – Creating Packages – Accessing a Package – Using a Package – Adding a Class to a Package – Hiding Classes – Static Import.

UNIT – 4: Multithreaded programming and Applets.

Multithreaded Programming: Creating Threads – Extending the Thread Class – Stopping and Blocking a Thread – Life Cycle of a Thread – Using Thread Methods – Thread Exceptions – Thread Priority – Synchronization.

Managing Errors and Exceptions: Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements – Using Finally Statement – Throwing our own Exceptions – Using Exceptions for debugging.

Applet Programming: How Applets differ from Applications – Preparing to write Applets – Building Applet Code – Applet Life Cycle – Creating an executable Applet – Designing a WebPage – Applet Tag – Adding Applet to HTML file – Running the Applet – More about Applet Tag – Passing parameters to Applets – Aligning the display – More about HTML tags – Displaying Numerical Values – Getting Input from the user.

Unit -5 Graphics Programming & Managing input/out put files in java:

Graphics Programming:

The Graphics class – Lines and Rectangles – Circle and Ellipses – Drawing Arcs – Drawing polygons – Line Graphs – Using control loops in Applets – Drawing bar charts

Managing input/out put files in java:

Concept of streams – stream classes – bytes stream classes – character stream classes – using streams – other useful i/o classes – using the file class – input output exceptions – creating of files – reading/writing characters - reading/writing bytes – handling primitive data types – concatenating and buffering files – random access files – interactive input and output – other stream classes.

Prescribed book:

1. E.Balaguruswamy, Programming with Java, A primer, 3e, TATA McGraw-Hill Company (2008).

Unit I: chapter (1,2,3,4)

Unit II: chapter (5,6,7,8)

Unit III: chapter (9,10,11)

Unit IV: chapter (12,13,14)

Unit V: chapter (15,16)

Reference Books :

1. John R. Hubbard, Programming with Java, Second Edition, Schaum's outline Series, Tata McGrawhill (2007).
2. Timothy Budd, Understanding Object Oriented Programming with Java, Pearson Education (2007).
3. Jana, Java and Object Oriented Programming Paradigm, PHI (2007).
4. Deitel & Deitel. Java TM: How to Program, 7th Edition, PHI (2008).

**BACHELOR OF COMPUTER APPLICATIONS (BCA) III YEAR SYLLABUS
EFFECTIVE FROM THE ACADEMIC YEAR 2010 - 2011.**

BCA – 304(A): COMPUTER ORGANIZATION

UNIT-I

BASIC STRUCTURE OF COMPUTERS: Computer Types, functional units, basic operations concepts, bus structures, software, CISC and RISC instruction sets, multi processors and multi computers.

LOGIC CIRCUITS: Basic logic functions, Logic gates- AND, OR, NOT, NAND, NOR Gates. Flip-flops, R-S flip-flop, Clocked R-S flip-flop.

UNIT-II

INPUT-OUTPUT ORGANIZATION: Accessing I/O devices, Interrupts, DMA, and standard I/O interface **ADDRESSING MODES:** Implementation of variables and constants Indirection and pointers, Index and arrays , Relative addressing, additional modes

UNIT-III

ARITHMETIC: Addition and subtraction of signed numbers, Design of fast adders, Multiplication of Positive numbers signed operand multiplication – Booth algorithm, Fast multiplication Bit – pair recording of multiplication carry – save addition of summands.

Integer Division – Restoring division, Non – restoring division

UNIT-IV

PIPELINING: Basic concepts role of cache memory, Pipeline performance, Data Hazards – Handling,

Data Hazards in software, Instruction Hazards, Influence on Instruction sets Addressing modes

UNIT-V

COMPUTER PERIPHERALS: Input devices- keyboard, mouse, trackball Joystick and touch pad, scanners. Output Devices- Video displays, flat panel Display, printers.

THE MEMORY SYSTEM: Read-only-memories- ROM, PROM, EPROM, EEPROM, flash memory, cache Memories-mapping functions, Virtual memory.

Text Book:

Computer Organization – Carl Hamacher, Zvonko G- Vranesic, Safwat G, Zaky Fifth Edition,
Mc-Grawhill INC.,

UNIT-I

Chapter-1: 1.1 to 1.7 page no: 2-16

Chapter-2: A.1 to A.4 page no: 661-674

UNIT-II

Chapter-3: 4.1, 4.2, 4.4, 4.7 page nos: 204-220, 234-237, 259-266

Chapter-4: 2.5 – 2.5.1, 2.5.2, 2.5.3, 2.5.4, 2.5.5 page no: 48-56

UNIT-III

Chapter-5: 6.1 to 6.5 page no: 368-385

Chapter-6: 6.6 page no: 385-390

UNIT-IV

Chapter-7: 8.01 to 8.4 page no: 454-476

UNIT-V

Chapter-8: 10.1 to 10.2 page no: 554-561

7.1 page no: 411-415

Chapter-9: 5.3, 5.5, 5.7 page no: 309-312, 337-339

**BACHELOR OF COMPUTER APPLICATIONS (BCA) III YEAR SYLLABUS
EFFECTIVE FROM THE ACADEMIC YEAR 2008 - 2009.**

BCA-304(B): ARTIFICIAL INTELLIGENCE

UNIT - I: Artificial Intelligence - Introduction - Intelligent Agents - Problem-Solving Solving Problems By Searching - Informed Search Methods - Adversarial Search (Game Playing)

UNIT- II: Knowledge And Reasoning - Logical Agents - First-Order Logic - Inference In First-Order Logic - Acting Logically - Planning - Uncertain Knowledge And Reasoning - Uncertainty

UNIT – III: Probabilistic Reasoning - Making Simple Decisions Making Complex Decisions

UNIT – IV: Communicating, Perceiving, And Acting - Agents That Communicate - Conclusions - Philosophical Foundations

UNIT – V: AI: Present And Future Introduction to AI, Propositional and Predicate logic

Reference Books:

1. Ritch & Knight, Artificial Intelligence, TMH
2. Stuart Russel Peter Norvig, Artificial Intelligence A Modern Approach, Pearson
3. Patterson, Introduction to Artificial Intelligence & Expert Systems, PHI
4. Poole, Computational Intelligence, OUP
5. Saroj Kaushik, Logic & Prolog Programming, New Age International
6. Giarranto, Expert Systems, VIKAS
7. Russel, Artificial Intelligence, Pearson

**BACHELOR OF COMPUTER APPLICATIONS (BCA) III YEAR SYLLABUS
EFFECTIVE FROM THE ACADEMIC YEAR 2008 - 2009.**

BCA-304(C): COMPUTER AIDED MODELLING

**BACHELOR OF COMPUTER APPLICATIONS (BCA) III YEAR SYLLABUS
EFFECTIVE FROM THE ACADEMIC YEAR 2010 - 2011.**

BCA – 305(A): E-COMMERCE

UNIT – I:

Introduction to Internet: History of Internet – History of World Wide Web – W3C. **Microsoft Internet Explorer 6:** Introduction to Internet Explorer 6 Web Browser – Connecting to Internet – Internet Explorer 6 Features – Searching the Internet – Electronic Mail – Instant Messaging.

Introduction to Scripting: JavaScript Introduction - Simple Program - Obtaining User Inputs with Prompt Dialogs - Memory Concepts – Arithmetic - Decision Making: Equality and Relational Operators.

JavaScript – Control Statements I: Introduction - if Selection Statement – if...else Selection Statement - while Repetition Statement - Assignment Operators - Increment and Decrement Operators.

(Scope and Standard as in Chapters: 1, 2, 7 and 8 of the book 1 referred below)

UNIT – II:

JavaScript – Control Statements II: Introduction - Essentials of Counter-Controlled Repetition - for Repetition Statement - switch Multiple - Selection Statement - do...while Repetition Statement - break and continue Statements – Labeled break and continue Statements - Logical Operators.

JavaScript – Functions: Introduction - Program Modules in JavaScript - Programmer-Defined Functions - Function Definitions - Scope Rules - JavaScript Global Functions

JavaScript – Arrays: Introduction – Arrays – Declaring & Allocating Arrays – Multidimensional Arrays.

(Scope and Standard as in Chapters: 9, 10 and 11 of the book 1 referred below)

UNIT – III:

Electronic Commerce:

Electronic Commerce Framework – Electronic Commerce and Media Convergence – Anatomy of E-Commerce Applications – Electronic Commerce Consumer Applications – Electronic Commerce Organization Applications.

Internet as a Network Infrastructure:

Internet Terminology – Chronological History of the Internet – Internet Governance: The Internet Society – Overview of Internet Applications.

(Scope and Standard as in Chapters: 1 and 3 of the book 2 referred below)

UNIT – IV:

Electronic Commerce and World Wide Web:

Architectural Framework for Electronic Commerce – World Wide Web as the Architecture – Web Background: Hypertext Publishing – Technology Behind the Web – Security and the Web.

Electronic Payment Systems:

Types of Electronic Payment Systems – Digital Token-Based Electronic Payment Systems – Smart Cards and Electronic Payment Systems – Credit Card-Based Electronic Payment Systems – Risk and Electronic Payment Systems – Designing Electronic Payment Systems.

(Scope and Standard as in Chapters: 6 and 8 of the book 2 referred below)

UNIT – V:

Inter-Organizational Commerce and EDI:

Electronic Data Interchange – EDI: Legal, Security and Privacy Issues – EDI and Electronic Commerce.

Advertising and Marketing on the Internet:

The New Age of Information-Based Marketing – Advertising on the Internet – Market Research.

Mobile and Wireless Computing Fundamentals:

Mobile Computing Framework – Mobile Computing Applications.

(Scope and Standard as in Chapters: 9, 13 and 20 of the book 2 referred below)

Text Books:

- 1) H. M. Deitel, P. J. Deitel, A. B. Goldberg, Internet & World Wide Web, Pearson Education
- 2) Kalakotia, Whinston, Frontiers of Electronic Commerce, Pearson Education

Unit-I: (Book 1)

Chapter1: 1.6, 1.8, 1.9

Chapter2: 2.1, 2.2 2.3, 2.4, 2.9, 2.10

Chapter7: 7.1, 7.2, 7.3, 7.4, 7.5, 7.6

Chapter8: 8.1, 8.5, 8.6, 8.7, 8.11, 8.12

Unit-II: (Book 1)

Chapter9: 9.1, 9.2, 9.3, 9.5, 9.6, 9.7, 9.8, 9.9

Chapter10: 10.1, 10.2, 10.3, 10.4, 10.8, 10.9

Chapter11: 11.1, 11.2, 11.3, 11.10

Unit-III: (Book 2)

Chapter1: 1.1, 1.2, 1.3, 1.4, 1.5

Chapter3: 3.1, 3.2, 3.6, 3.7

Unit-IV: (Book 2)

Chapter6: 6.1, 6.2, 6.3, 6.4, 6.5

Chapter8: 8.1, 8.2, 8.3, 8.4, 8.5, 8.6

Unit-V: (Book 2)

Chapter9: 9.1, 9.3, 9.4

Chapter13: 13.1, 13.2, 13.4

Chapter20: 20.1, 20.6

Reference Books:

- 1) Bhaskar Bharat, Electronic Commerce - Technologies & Applications, TMH
- 2) Loshin Pete, Murphy P.A, Electronic Commerce, Jaico Publishing Housing.
- 3) Murthy, E-Commerce, Himalaya Publishing.
- 4) M.M. Oka, E-Commerce, EPH

**BACHELOR OF COMPUTER APPLICATIONS (BCA) III YEAR SYLLABUS
EFFECTIVE FROM THE ACADEMIC YEAR 2008 - 2009.
BCA – 305(B): DISTRIBUTED DATABASES**

UNIT – I: Introduction to Database Implementation and Distributed Database Systems

Distributed databases – transparency, performance and reliability. The concept and role of the transaction in distributed computing. - Introduction to parallel and distributed architectures. –
Distributed and parallel databases concepts – autonomy, distribution, and heterogeneity. Client/server, parallel and distributed architectures -

UNIT – II: Distributed Database Design

Design strategies. Horizontal, vertical and hybrid fragmentation. Resource allocation. P2P systems: unstructured and structured P2P systems, and query processing.

Introduction to Transaction Management: Transaction model and properties. Transaction structure. Transaction serialization and recovery. Lock based concurrency control. Multi-phase locking protocols. Timestamp ordering. Serialization.

UNIT – III: Recovery: Failure analysis. Reliability and availability. Sources of failure. Recovery techniques: shadow paging and write-ahead logging. Memory and storage management (Undo/redo and steal/force). Two Phase Commit, Presumed abort, presumed commit. Three phase commit. Partitions. Replication and voting. Shared-nothing DB. Scalability of replication. Data integration: schema directed data integration.

UNIT – IV: Parallel Database Systems - Parallel architectures and sharing models. Data placement. Load balancing. Sources of parallelism. XML queries and algebra in the Enosis integration platform - Data exchange: Schema mapping and information preservation. - Data cleaning.

UNIT – V: Database Integration and Multidatabases and Multidimensional Indices - Schema translation and integration. Transactions in heterogeneous environments. Ad-hoc databases in the Internet.

REFERENCE BOOKS:

1. Database Management Systems, 2nd edition, R. Ramakrishnan and J. Gehrke,
2. Database System Concept, 4th edition, A. Silberschatz, H. Korth, S. Sudarshan, (Parallel and Distributed Database Systems)

<u>UNIT-3</u>	4.1	4.2	4.3	(CHAPTER-1)
	8.1	8.2	8.3	(CHAPTER-2)
<u>UNIT-4</u>	9.1	9.2		(CHAPTER-1)
	11.1	11.2	11.3 11.4	(CHAPTER-2)
	13.1	14.1		(CHAPTER-3)
<u>UNIT-5</u>	15.1	15.2		(CHAPTER-1)
	16.1	16.2	17.1 17.2	(CHAPTER-2)
	18.1	19.1	20.1	(CHAPTER-3)

Reference Books:-

1. Data Communication and networking, Fred Halsall
2. Data Communications & Computer Networks, Behrouz Forozou
3. The Advanced Encryption Standard, William Stallings

**BCA 301: OPERATING SYSTEMS
EFFECTIVE FROM THE ACADEMIC YEAR 2010-2011**

MODEL QUESTION PAPER

Time: 3hrs

Max.Marks: 80

Answer Eight Questions by choosing at least One Question from each Unit

Each question carries 10 Marks

UNIT – I

1. What is an Operating System? Explain Functionalities and Objectives of Operating Systems.
2. Explain Interrupts and Types of Interrupts.
3. Explain about Instruction Cycle.

UNIT – II

4. Explain Process Control Block and Process States.
5. What is a Scheduling? What are the various types of Scheduling?
6. Discuss the Scheduling Algorithms.

UNIT – III

7. Explain Monitors with One Example.
8. Explain Deadlock avoidance with Example.
9. What is Mutual Exclusion? Discuss in details about various type of approaches to Mutual Exclusion.

UNIT – IV

10. Discuss in detail about paging Concepts.
11. Explain the Concept of Virtual Memory.
12. Explain in details about Segmentations.

UNIT – V

13. Explain about buffering and blocking.
14. Explain about Security Threats.
15. Explain Disk Scheduling Algorithms.

BCA 302: COMPUTER NETWORKS
EFFECTIVE FROM THE ACADEMIC YEAR 2010-2011
MODEL QUESTION PAPER

Time: 3hrs

Max.Marks: 80

Answer Eight Questions by choosing at least One Question from each Unit
Each question carries 10 Marks

UNIT – I

1. Explain in detail ISO OSI reference model.
2. Explain the categories of networks and transmission media
3. what is multiplexing? Distinguish FDM, WDM, and TDM ?

UNIT – II

4. Explain error detection and error correction
5. Discuss about the wireless Lans
6. Briefly explain various types of Lans

UNIT – III

7. Write about Addressing and Intenetworking
8. Explain network layer protocols
9. Discuss about the routing

UNIT – IV

10. What is a public key cryptography? Explain with example.
11. Discuss the QOS and their techniques
12. Write short notes on
(a)Firewalls (b) user authentication

UNIT – V

13. Write short notes on
(a) FTP (b) SMTP
14. Compare and contrast three types of WWW documents
15. Explain DNS and http

BCA 303: PROGRAMMING WITH JAVA
EFFECTIVE FROM THE ACADEMIC YEAR 2010-2011
MODEL QUESTION PAPER

Time: 3hrs

Max.Marks: 80

Answer Eight Questions by choosing at least One Question from each Unit
Each question carries 10 Marks

UNIT – I

1. Explain basic concepts of OOP?
2. Briefly explain Features of java?
3. Write and explain Structure of java program using an example program?

UNIT – II

4. Explain about Inheritance with an example?
5. Explain about iterative control statements with example?
6. Explain about visibility control in java?

UNIT – III

7. Explain about wrapper classes?
8. Differentiate between Arrays and Vectors?
9. Explain how multiple Inheritance is achieved in java with an example?

UNIT – IV

10. What is a Thread? Thread life cycle?
11. Write syntax for handling exceptions in java?
12. Explain Applet life cycle?

UNIT – V

13. Explain about any five methods in Graphics class?
14. Explain about Random access files?
15. What is a stream? Explain about byte streams and character streams?

BCA 304(A): COMPUTER ORGANIZATION
EFFECTIVE FROM THE ACADEMIC YEAR 2010-2011
MODEL QUESTION PAPER

Time: 3hrs

Max.Marks: 80

Answer Eight Questions by choosing at least One Question from each Unit
Each question carries 10 Marks

UNIT-I

1. Explain the different functional units of a computer
2. Explain CISC and RISC instruction sets
3. Define and design the circuits of various logic gates.

UNIT-II

4. Explain DMA with a neat Circuit design
5. Explain about standard I/O interfaces
6. Explain various types of addressing modes.

UNIT-III

7. Explain about addition and subtraction of signed numbers.
8. Explain about positive number multiplication with a neat circuit by an example
9. Explain Re-storing Division algorithm with example

UNIT-IV

10. Explain 4-stage pipeline in detail
11. Explain data Hazards in pipeline process
12. Explain Influence on instruction set with addressing modes.

UNIT-V

13. Explain various ROM memories.
14. What is mapping function? Explain various mapping functions.
15. Describe the fundamental concepts of a processing unit.

**BCA-304(B): ARTIFICIAL INTELLIGENCE
EFFECTIVE FROM THE ACADEMIC YEAR 2010-2011
MODEL QUESTION PAPER**

Time: 3hrs

Max.Marks: 80

Answer Eight Questions by choosing at least One Question from each Unit
Each question carries 10 Marks

UNIT – I

1. What is AI and what are different fields of applications of AI.
2. Write about problem solving techniques with an examples
3. State the importance of Heuristic search methods and discuss Hill climbing method in detail

UNIT – II

4. Explain First order logic and planning
5. Discuss knowledge & reasoning methods.
6. Discuss uncertainty.

UNIT – III

7. Describe Probabilistic Reasoning.
8. Illustrate simple decision
9. Describe complex decision.

UNIT – IV

10. Explain communications, perception and Action in AI
11. What are the philosophical foundations of AI.
12. Conclude communications & Perception.

UNIT – V

13. Describe Futuristic AI.
14. Explain Propositioned logic.
15. Explain predicate logic.

**BCA-304(C): COMPUTER AIDED MODELLING
EFFECTIVE FROM THE ACADEMIC YEAR 2010-2011
MODEL QUESTION PAPER**

Time: 3hrs

Max.Marks: 80

Answer Eight Questions by choosing at least One Question from each Unit
Each question carries 10 Marks

**BCA 305(A): E-COMMERCE
EFFECTIVE FROM THE ACADEMIC YEAR 2010-2011**

MODEL QUESTION PAPER

Time: 3hrs

Max.Marks: 80

Answer Eight Questions by choosing at least One Question from each Unit
Each question carries 10 Marks

UNIT-I

- 1) Describe the various features of Internet Explorer 6.
- 2) What are the popular approaches of sending messages on the Internet?
- 3) Write about if and if-else selection statements in JavaScript.

UNIT-II

- 4) Explain about various JavaScript Operators.
- 5) Describe about various looping statements of JavaScript.
- 6) Briefly explain about Arrays in JavaScript with an example.

UNIT-III

- 7) What is electronic commerce and its anatomy?
- 8) Explain about Internet Governance.
- 9) Describe about Electronic Commerce and Media Convergence.

UNIT-IV

- 10) How does World Wide Web provide Architecture?
- 11) Briefly explain about Risk in Electronic Payment Systems.
- 12) Explain about Security and the Web.

UNIT-V

- 13) Write about EDI and Electronic Commerce.
- 14) Explain about advertising on Internet.
- 15) What are the Mobile Computing Applications?

BCA-305(B): DISTRIBUTED DATABASES
EFFECTIVE FROM THE ACADEMIC YEAR 2010-2011
MODEL QUESTION PAPER

Time: 3hrs

Max.Marks: 80

Answer Eight Questions by choosing at least One Question from each Unit
Each question carries 10 Marks

UNIT – I

1. Describe transparency, performance and reliability in distributed databases.
2. Illustrate parallel & distributed database.
3. Distinguish client/server architecture, parallel and distributed architectures.

UNIT – II

4. Describe different design strategies & explain, Horizontal vertical & hybrid fragmentation.
5. Explain transaction serialization & recovery with transaction structure.
6. Explain concurrency control with multiphase locking protocols.

UNIT – III

7. Give a detailed description about failure analysis.
8. Distinguish between Two phase commit & 3 phase commit partitions.
9. Explain scalability Replication & Data integration.

UNIT – IV

10. Explain parallel architecture & sharing models.
11. Give detailed description on sources of parallelism
12. Data exchange acquittance using schema mapping

UNIT – V

13. Explain multi data bases & multi dimensional databases.
14. Explain transactions among Heterogeneous databases.
15. Explain adhoc database on the internet.

BCA-305(C): NETWORK SECURITY
EFFECTIVE FROM THE ACADEMIC YEAR 2010-2011
MODEL QUESTION PAPER

Time: 3hrs

Max.Marks: 80

Answer Eight Questions by choosing at least One Question from each Unit
Each question carries 10 Marks

UNIT – I

1. Explain different security mechanisms, security attacks.
2. Explain in detail substitution techniques.
3. Explain transposition techniques of cryptography

UNIT – II

4. Distinguish between stream ciphers & block ciphers with examples?
5. Explain Data Encryption standard techniques.
6. Illustrate the evaluation criteria of AES.

UNIT – III

7. Explain the test for promality.
8. Describe Fermats theorem
9. Explain Euclidean algorithm.

UNIT – IV

10. Design principles RSA algorithm
11. Explain Message Authentication code.
12. Kerberos illustration.

UNIT – V

13. Explain S/MIME in detail
14. Depict web security considerations.
15. Describe secure socket layer & Transport layer.

BACHELOR OF COMPUTER APPLICATIONS (BCA) III YEAR SYLLABUS

EFFECTIVE FROM THE ACADEMIC YEAR 2010 - 2011.

PROJECT-WORK

Planning – establishing the plans for creating an information system by Defining the system to be developed – based on the systems prioritized according to the organization's critical success factor (CSF), a system must be identified and chosen - The project scope – a high level of system requirements must be defined and put into a project scope document - the project plan - – all details from tasks to be completed, who completed them and when they were completed must be formalized

Analysis – the users and IT specialists collaborate to collect, comprehend, and logistically formalize business requirements

Design – this is where the technical blueprint of the system is created by Designing the technical architecture – choosing amongst the architectural designs of telecommunications, hardware and software that will best suit the organization's system and future needs Designing the systems model – graphically creating a model from graphical user interface (GUI), GUI screen design, and databases, to placement of objects on screen

Development – executing the design into a physical system by Building the technical architecture – purchasing the material needed to build the system

• **Testing** – testing the developed system Write the test conditions – test conditions are conducted by comparing expected outcomes to actual outcomes.

• **Implementation** – the systems are placed and used in the actual workforce and the user guide is created Training is provided to the users of the system - usually through workshops or online

Maintenance – keeping the system up to date with the changes in the organization and ensuring it meets the goals of the organization by Building a help desk to support the system users

**BACHELOR OF COMPUTER APPLICATIONS (BCA) III YEAR SYLLABUS
EFFECTIVE FROM THE ACADEMIC YEAR 2010 - 2011.
JAVA PROGRAMMING LAB LIST**

1. Write a program to check the given number is Prime or not?
2. Design and develop a java program using?
 - a. Default constructor
 - b. Arguments constructor
 - c. Copy constructor
 To find area of a rectangle
3. Write a program that creates an abstract class called dimension creates two subclasses, rectangle and triangle. Include, appropriate methods for both the subclasses that calculate and display the area of the triangle?
4. Write a java program. A class Teacher contains two fields. Name and Qualifications. Extends the class to Department it contains Dept_ No., Dept _ Name . An interface named as college it contains one field Name of the college. Using the above classes and interface get the appropriate information and display it.
5. Write a program that accepts a name list of five students from the command line and store them in a vector. Accomplish the following.
 - a. To display the size and capacity
 - b. To delete an item in the list
 - c. To add an item at a specified location at the list
 - d. To add an item at the end of the list
 - e. to print the content of the vector
6. Write a Java Program for matrix manipulation?
7. Write a program to check whether the given string is palindrome or not?
8. Write a program for linked list processing?
9. Write a program for stack operations?
10. Write a program for user defined exceptions that checks the internal and external marks , if the internal marks is greater than 40 it raise the exception internal marks is exceed, if the external mark is greater than 60 exception is raised and display the message the External Marks is exceed
11. Write a program to
 - A print the name, priority and thread group of the thread
 - B change the name of the current thread to “Java”
 - C. Display the details of the current thread
12. (a)Write a java program to check whether the file is readable, writeable and hidden?
(b) Create a random access file for employee’s data?
13. Write an applet for growing text and growing image?
14. Write an applet program to print the human face?
15. Write a java program for dynamic color changing umbrella?
16. Write an applet to draw the following shapes with different colors?

a) Line	b) poly line	c) clipping	d) circle	e) oval
f) Ellipse	g) arc	h) Polygon		
- 17 Write an applet to draw national flag with colors?
- 18 Write a java program to implement simple arithmetic calculator using AWT?
- 19 Write a program to create a menu for typical banking system?
- 20 Write a program to create a menu for inventory management system?

21 Design a text editor similar to notepad, implementing swing, event and IO file Handling?

22 Write a java program for student mark list processing using JDBC?

23 Create employee table with appropriate field structure using JDBC?

24. Write the student details program extending frame, which have six buttons implementing the following events:

A ADD – which allows you to add the records in the table

B delete - delete a record

C update - modifying a record

D view all - show all the records

E clear - clear the text fields

F exit - exit the application

25. Write a Java program using dynamic method dispatcher?

**BACHELOR OF COMPUTER APPLICATIONS (BCA) II YEAR SYLLABUS
EFFECTIVE FROM THE ACADEMIC YEAR 2010 - 2011
SOFTWARE LAB - III**

1. Demonstrate creation of Threads and Synchronization in Java
2. Implement Banker's Algorithm for deadlock prevention in Java/C++
3. Design and develop C++/Java program for FCFS & SJF CPU Scheduling compare for same set of jobs.

Process	Burst Time
P1	10
P2	1
P3	2
P4	1
P5	5

4. Design and develop C++/Java program for Round Robin Scheduling for a given set of jobs (above table) and Show average waiting time, turnaround time.
5. Demonstrate producers and Consumers problem for Inter process communication in Java/C++.
6. Design and develop C++/Java program for FIFO page replacement algorithm for following set of page references 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6 and show no. of page faults.
7. Design and develop C++/Java program for LRU page replacement algorithm for following set of page references 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6 and show of no. of page faults and belady's anomaly if it occurs..
8. Design and develop C++/Java program for Optimal page replacement algorithm for following set of page references 1,2,3,4,2,1,5,6,2,1,2,3,5,5,3,4,1 and show of no. of page faults and belady's anomaly if it occurs.
9. Design and develop a Software solving the following equations using LPP

$$\text{Max } Z = 6X_1 + 8X_2 \text{ Subjected to the constraints}$$

$$2X_1 + 3X_2 \leq 16, \quad 4X_1 + 2X_2 \leq 16$$
10. Design and develop a software to solve transportation problem using Vogel's method to find the initial basic solution of the following

	Destination				
	1	2	3	4	Supply
Source 1	10	30	50	10	7
Source 2	70	30	40	60	9
Source 3	40	8	70	20	18
demand	5	8	7	14	