University of Rajasthan Jaipur

SYLLABUS

Bachelor of Computer Application

B.C.A. Part-I Examination	2022
B.C.A. Part-II Examination	2023
B.C.A. Part-III Examination	2024

Bachelor of Computer Applications (BCA)

Eligibility for Admission to BCA course session 2014-2015 "A candidate must have passed 10+2 examination (Arts/Science/Commerce) or equivalent with securing 48% or more (minimum pass mark for SC/ST/OBC/SBC candidates) in aggregate without any approximations".

In regard to reservation of Seats for admission to BCA Part I, the reservation policy of Govt. of Rajasthan/University of Rajasthan will be followed.

Admission Procedure: Admission to BCA Part I course will be made on the basis of merit list (10+2 level).

Attendance: A candidate shall be required to put in a minimum of 75% attendance at the lectures and 75% attendance at the practicals separately in each paper, as per university norms.

Scheme of Examination for Bachelor of Computer Applications(BCA):

The Bachelor of Computer Applications will be a Three Part Course in Faculty of Science extending over three academic sessions. Medium of instructions and examination will be English only. There shall be an examination at the end of each part. Each theory paper examination will be of three hour duration and shall carry 100 marks. Theory paper shall contain three parts. All questions are compulsory.

Part – I (very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part – II (short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part – III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Each practical examination (Maximum marks 100) will be of four hour duration on one day and carry 60 marks for exercises(3 exercises) assigned in the examination, 25 marks for viva-voce and 15 marks for practical records and regularity of the candidate. Other rules and procedures of examinations will be common to those for B.Sc. course.

"A candidate will be promoted to Part III if he/she passed with 40% in three theory and two practical papers of Part II examination and with at least 50% in aggregate of these papers. However, if the candidate has not passed Part I Examination then also he/she be promoted to part III if the number of due papers (part I & Part II together) does not exceed four theory papers and two practical papers."

Passing of Examination and Promotion to next Part: A candidate must secure at least 40% marks in each paper and 40% marks in aggregate for passing of the examination. A

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candidate will be promoted to part II if he/she has secured at least 40% in **three theory** and **two practical** papers of part I examination and with at least 50% in aggregate of these papers. A candidate will be promoted to Part III if he/she has passed 40% in three theory and two practical papers of Part II examination and with at least 50% in aggregate of these papers, and has passed Part I examination.

Division and Honors: On successful passing out of all three part examinations (in first attempt), those securing 75% and above in aggregate of all the three parts will be awarded First division with Honors, and those securing between 60% or more but less than 75% will be awarded First division and rest will be awarded Second division.

BCA Part - I

Code	Subject	Hours / Week	Max. Marks
Theory			
BCA-101	Elementary Physics	4	100
BCA-102	Basic Mathematics	4	100
BCA-103	General English	4	100
BCA-104	Principles of Programming Language (Through 'C')	4	100
BCA-105	Computer Organization	4	100
BCA-106	Office Management Tools	4	100
Practical			
BCA-107	Technical Writing and Communication Skills	3	100
BCA-108	C- Laboratory	3	100
BCA-109	Office Automation Laboratory	3	100
BCA-110	Typing Skills Laboratory (English and Hindi Language)	3	100

BCA Part - II

Code	Subject	Hours / Week	Max. Marks
Theory			
BCA-201	Business Accounting	4	100
BCA-202	Discrete Mathematics	4	100
BCA-203	Operating System	4	100
BCA-204	Database Management System	4	100
BCA-205	Web Designing and Multimedia	4	100
	Elective (Any One)		
BCA-206 A	Object Oriented Programming Concepts (Through C)	4	100
BCA-206 B	Programming through VB 6.0	4	100
Practical			

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BCA-207	Database Laboratory	3	100
BCA-208	Object Oriented Laboratory	3	100
BCA-209	Web Designing Laboratory	3	100
BCA-210	Multimedia Laboratory	3	100

BCA Part - III

Code	Subject	Hours / Week	Max. Marks
Theory			
BCA-301	Data Structure (Using C/C++)	4	100
BCA-302	System Design Concepts	4	100
BCA-303	Networking Technologies	4	100
BCA-304	Core Java Programming	4	100
BCA-305	E-Commerce	4	100
	Elective (Any One)		
BCA-306(A)	ASP.Net	4	100
BCA-306(B)	PHP	4	100
BCA-306(C)	Linux and Shell Programming	4	100
Practical			
BCA-307	Networking Laboratory	3	100
BCA-308	Core Java Laboratory	3	100
BCA-309	Elective Laboratory	3	100
BCA-310	Project	3	100

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BCA Part - III

BCA301 : Data Structure (Using C/ C++)

Question Paper pattern for Main University Examination

Max Marks: 100

Part – I (very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part – II (short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part – III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

UNIT – I

Introduction to Algorithm Design: Algorithm, its characteristics, efficiency of algorithms, analyzing Algorithms and problems.

Linear Structure: Arrays, records, stack, operation on stack, implementation of stack as an array, queue, types of queues, operations on queue, implementation of queue.

UNIT – II

Linked Structure : List representation, Polish notations, operations on linked list - get node and free node operation, implementing the list operation, inserting into an ordered linked list, deleting, circular linked list, doubly linked list, implementation of stack and queues using linked list.

UNIT – III

Tree Structure : Concept and terminology, Types of trees, Binary search tree, inserting, deleting and searching into binary search tree, implementing the insert, search and delete algorithms, tree traversals , Huffman's algorithm.

UNIT – IV

Graph Structure : Graph representation - Adjacency matrix, adjacency list, Warshall's algorithm , adjacency multilist representation. Orthogonal representation of graph . Graph traversals - bfs and dfs. Shortest path, all pairs of shortest paths, transitive closure, reflexive transitive closure.

UNIT – V

Searching and sorting : Searching - sequential searching, binary searching, hashing.
Sorting - selection sort, bubble sort, quick sort, heap sort, merge sort, and insertion sort, efficiency considerations.

Recommended reference books
1. S. Lipschutz: Data Structures; Mc Graw Hill International Edition,2008.
2. A.V. Aho, J.E. Hopcroft, and J.D. Ullman, Data Structures and Algorithms, 3rd Edition; Pearson Education Asia,2008
3. Salaria R.S.: Data Structure and Algorithms Using C/C++, 4th Edition; Khanna.
4. Jean-Paul Tremblay and Paul G. Sorenson. An Introduction to Data structures with applications TMH Publishing Co Ltd.
5. A. Michael Berman: Data Structures via C++ Oxford University Press.
6. Jean-Paul Tremblay and Paul G. Sorenson. An Introduction to Data Structures with applications. TMH Publishing Co Ltd.

BCA302 : System Design Concepts.

UNIT – I

Introduction to Systems Design Environment:

Systems Development Approaches-Function Oriented. Data Oriented, Object Oriented, Development Process, Methodologies, Tools, Modeling Methods, Processing Types and Systems, Batch Processing, Realtime Processing.

System Development Life Cycle, Linear or Waterfall Cycle, Linear cycle phase problem definition, system specification, system design, system development, testing, maintenance Problems with Linear Life Cycle, Iterative Cycles, Spiral model Requirements analysis, Importance of Communication, Identifying Requirements, Data and Fact Gathering Techniques, Feasibility Studies, Introduction to Prototyping, Rapid Prototyping Tools, Benefits of prototyping.

UNIT – II

System Design: Interface design tools, user interface evaluations, Introduction to Process Modeling, Introduction to Data Modeling.

System Design Techniques, Document Flow Diagrams, Documents, Physical Movement of documents, Usefulness of Document Flow diagram, Data Flow Diagrams, DFD notation, Context diagram DFD leveling, Process descriptions structured English, Decision Trees and Decision Tables, Entity Relationship Diagrams, Entities, Attributes, Relationship, Degree, Optionality, Resolving many to many relationship, Exclusive relationship, Structure Charts, Modules, Parameter passing. Execution sequence, Structured Design, Conversion from Data Flow Diagrams to Structure Charts.

UNIT – III

Testing fundamentals: Objectives, principles, testability, Test cases: White box & Black box testing strategies: verification & validation, UNIT test, integration testing, validation, testing, system testing, System Implementation, Maintenance and documentation, Document Configurations Maintaining a Configuration.

UNIT – IV

S/W Project planning Objectives, Decomposition techniques : S/W Sizing, Problem-based estimation, Process based estimation, Cost Estimation Models : COCOMO Model. S/W Design : Objectives, Principles, Concepts, Design methodologies Data design, Architectural design, procedural design, Object oriented concepts.

UNIT V

An overview of Management Information System: Definition & Characteristics Components of MIS. Frame Work for Under standing MIS , Information requirements & Levels of Management, Simon's Model of decision Making, Structured V. Unstructured decisions, Formal V. Informal Systems.

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Developing Information Systems: Analysis & Design of Information Systems: Implementation & Evaluation, Pitfalls in MIS Development.

References :

1. Igor Hawryszkiewyez, Introduction to System Analysis and Design, 4th edition, Prentice-Hall.
2. Jeffrey L. Whitten, and Lonnie D. Bentey,Systems analysis and Design Methods 4th edition, Tata McGraw-Hill.
3. Roger S. Pressman, "Softwere Engimeering-A Practitioner's Approach", Thrid Edition, McGraw Hill
4. R.E. Fairley, 'Softwere Engineering Concepts", McGraw Hill
5. J. Kanter, "Management/Information Systems". PHI.
6. Jalota "An Integrated Approach to Softwere Engineering", Narosa Publishing House.
7. Gordon B. Davis & M.H. Olson. " Management Information Systems : Conceptual Foundation, structure & Development."

BCA303 : Networking Technologies

Question Paper pattern for Main University Examination   *Max Marks: 100*

Part – I (very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part – II (short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part – III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

UNIT-I

Network architecture, configuring network, network strategies, networks types, LAN, MAN and WAN [Basic concepts, Line configuration, topology, transmission mode, identify key components of network, categories of network, differentiating between LAN, MAN, WANS and Internet].

UNIT -II

The OSI model, The physical layer (bandwidth limited signals, transmission media, wireless transmission), the data link layer, error detection and correction, data link protocols, Bridges, the network layerm routing algorithm, congestion control algorithm, internet working, the transport layer, the application layer, MAC protocols for high speedsLANs.

· UNIT-III

Introduction to TCP/IP [Understand the TCP/IP Protocol Suite, its history and modification processes compare TCP/IP to the Open Systems Interconnection (OSI) reference model, Examine a number of TCP/IP applications such as FTP, Telnet, DNS, DHCP, Boot, etc. connection less Internetworking, IP, IPv6, IP multicnsdairtg, Routing protocols, TCP, UDP, SNMP, SMTP and MIME, HTTP

UNIT-IV

Circuit Switching: Simple switching Network, Circuit Switching Networks, Brief idea of following (detail working) not required:

Circuit Switching Concepts: Space Division switching, Time Division Multiplexing, Routing in circuit switching Networks, Control Signalling, Inchannel & common channel signaling, Brief idea of SS7. Packet Switching: Packet switching principles, Routing,X.25 Data Encoding: Spread Spectrum. Asynchrous and Synchronous transmission, Full and Half duplex, Interfacing, Functional and Procedural aspects of V.24,

UNIT-V

Data Communication Systems, Serial Data formats, encoded data formats, error detection and correction], information about microwave, information about microwave in Comunications, Satellite, Geosynchronous Satellites and optical fiber communication [Basic concept of light propagation, Fiber Cables, Optical fiber versus Metalic cable facilities, Light sources, Optical Detectors, Fiber cable losses, SONET, ISDN, DSL

Recommended Books :

1. William Stallings: Data & Communications,Sixth Edition
2. A. S. Tanenbaum : Computer Networks
3. Behrouz A Foruzan, Data Communication and Networking; 3rd Edition; Tata McGraw Hill., 2004

BCA304 : Core Java Programming

Question Paper pattern for Main University Examination   *Max Marks: 100*

Part – I (very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part – II (short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part – III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.
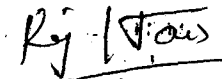
UNIT – I

Overview of Object Oriented Concepts in Java.
Introduction: getting and installing the Java Development Kit, Java features like security, portability, byte code, java virtual machine, object oriented, robust, multithreading, architectural neutral, distributed and dynamic, Java programming language structure and syntax, control statements (The If statement, Logical Operators, The Conditional Operator, the Switch Statement, Variable Scop, Loops).

UNIT – II

Java arrays, Java Strings, Operations on Strings and String Buffer Objects, Class, Objects, Methods and Problem solving using classes, objects and relationships.
Inheritance, types of Inheritance, packages and interface, exception handling

UNIT - III

Java utilities like java.lang, java.util, java.io, GUI in Java using AWT and Swing, Event Handling Mechanisms, AWT based effective GUI in Java : Detailed overview of AWT classes, Graphics primitives and UI Components, Layout features, Standalone GUI applications, Layout Managers, Implementation of event driven mechanism, Delegation of even model, Listeners and Adapters, Inner classes.

UNIT - IV

Applets : Introduction to Applet coding, Applet life cycle, Graphis facility, Color and Font, Passing parameters to applets, Apletcontext, Inter Applet Communication. Threading in Java : Fundamentals of Multi-threading Java coding with Thread classes, thread Management in Java, Implicit wait, Using Runnable interface, Thread Management in Java, Implicit wait, Using Runnable interface, Thread Synchronization, Inter thread communication.

UNIT – V

Overview of Networking in Java : URL class and its usage through connection, Sockets based connectivity, TCP/IP Sockets and server sockets, Datagram Sockets. Collections in Java-Array List, stack, queue, Hash table, Collection class hierarchy, JDBC and Jar files.

References

1. Patrick Naughton, Herbert Schildt :, Java, The Complete Reference : 7th Edition.
2. E. Balagurusamy: Programming with Java- Tata McGrawHill Publishers, II Edition.
3. Khalid A. Mughal, Rolf W. Rasmussen; A Programmer's Guide to Java Certification (2nd Edn.).
4. Cay. S Horstmann, Gary Cornell; Core Java Vol I & II; The Sun Micro Systems Press.
5. Ken Arnold, James Gosling: Core Java Fundamentals(Volume I and Volume 2). 2nd Edition-, Addison Wesley.
6. Kathy Sierra, Head first Java, 2nd Edition, Orielly.
7. Bruce Eckel: Thinking in Java, 4th Edition.

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BCA 305 : E- Commerce

Question Paper pattern for Main University Examination   *Max Marks: 100*

Part - I (very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.

Part - II (short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.

Part - III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

UNIT-I

Introduction to Electronic Commerce : Definition of Electronic Commerce, The scope of Electronic Commerce. Business Strategy in an Electronic Commerce : The value chain, Competitive advantage, Business strategy. Business to Business Electronic Commerce : Inter-organizational transactions, Electronic markets, Electronic data interchange (EDI), EDI: the nuts and bolts, EDI and Business Inter organizational E-Commerce.

UNIT-II

Testing & Implementation: Introduction to Testing, Understanding Testing, Applying Testing. Challenges and Opportunities in Applying Verification and Validation.
Implementation : Understanding Implementation. Applying Implementation Planning with example, Challenges and Opportunities of Implementation Planning.

UNIT-III

Electronic Payment Systems: Special features required in payment systems, Types of E-payment systems, E-Cash, E-cheque, credit card, Smart Card, Electronic Purses, E-Marketing, E-Customer Relationship Management, E Supply Chain Management.
Security Issues in E-Commerce: Security risk of E-Commerce, Types of threats, Security tools and risk management approach. Cyber laws, Business Ethics.

UNIT-IV

Introduction to e-banking: Definition, Transaction websites components, E-Banking support services, Wireless Banking.
E-Banking Risk: Transaction/Operation Risk, Credit Risk, Liquidity/Internet Risk, Price Risk, Strategic Risk, Reputation Risk

UNIT V

Introduction to M-Commerce: Business using smart devices (Mobile, e-wallet, online shopping and payment system via mobile, security and privacy features), Mobile delivery technology, applications of M Commerce. M Wallet, Mobile Shopping. Security Issues: Device security, Language security, wireless security, security assessment, Tokenization, 3D security, OTP generation, PCI compliance.

Reference:
(i)   Sushila Madan &, Ashish Kumar: Securing transactions and payment system for m-commerce, IGI Global Inc.
(ii) PI Joseph, E-Commerce: A Managerial Perspective,PHI,2002.
(iii) Ravi Kalakota & A.B. Whinston, Frontiers of electmnic Commerce Pearson Eduction,
(iv) Ravi Kaiakota & A.B. Whinston, electronic Commerce-A Manager's Guide, Pearson Education.
(v)   Agarwaia Kamlesh, N. & Agarwala Deeksha: Business on the Net introduction to the E-Commerce, Macmillan India.
(vi) Bharat Bhaskar: Electronic Commerce-Framework Technologies and Applications, TMH

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BCA306 (A): Advance Technologies of Programming through ASP.NET

Question Paper pattern for Main University Examination . *Max Marks: 100*

Part – I (very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.

Part – II (short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.

Part – III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

UNIT-I

Introduction to .Net framework: Managed Code and the CLR Intermediate Language, Metadata and JIT Compilation Automatic Memory Management

The Framework Class Library: .Net objects- ASP .NET, NET web services, Windows Forms.

Elements : Variable and constants data types, declaration. Operators, types precedence, Expressions Program flow, Decision statements, properties, delegate, indexer, attributes , Loop statements.

UNIT-II

Types: Structures, Enumerations, Reference data types, arrays.

Windows Programming: Creating windows forms windows controls, Button, Check box, Combo box, Label, List box Radio Button, Text box, Events, Click, close deactivate, Load, mousemove, mousedown, mouseup.

Menus and Dialog Boxes : Creating menus, menu items, context menu, Using dialog boxes, show dialog() method.

UNIT - III

ADO.NET : Architecture of ADO.NET, ADO.NET providers, Connection, Command, Data Adapter, Dataset, Connecting to Data Source, Accessing Data with Data set and Data reader, Create an ADO.NET application, Using Stored Procedures.

UNIT-IV

ASP.NET Features: Application of States and Structure: Change the Home Directory in IIS- Add a Virtual Directory in IIS- Set a Default Document for IIS – Change Log File Properties for IIS-Stop, Start, or Pause a Web Site. Server security and application security issues.

UNIT-V

Creating Web Controls: Web Controls, HTML Controls, Using Internist Control, Using Input Validation Controls, Selecting Controls for Applications, Data Controls and Adding web controls to

Creating Web Forms: Server Controls, Types of Server Controls, state management- Types and applications, Adding ASP.NET Code to a page.

Web Services and WCF: Introduction to Web Services protocol and standards WSDL Documents-Visual Studio.NET Architecture of WCF, WCF Client

Reference Books:
1. Mathew Mac Donald: Beginning ASP.NET 4.0 in C# 2010, 3rd Edition, A Pres.
2. Bill Evjen Scott Hanselman, Devin Rader: Professional ASP.NET4, 2010, Willey.
3. George Shepherd: Microsoft ASP.NET Step by step, 2010 Microsoft Press.
4. Imar Spaanjaars: Beginning ASP.NET 4: in C# and VB (Wrox Programming to Programmer) , 2010 Wicly Publishing.
5. Steven Holzner: ASP NET 4.0 (Cover C# & VB) Black Book: Dreamtech Press
6. Steven Holzner: NET Programming Black Book, Dreamtech Press:

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BCA306 (B): Advance Technologies of Programming through PHP

Question Paper pattern for Main University Examination   *Max Marks: 100*

Part – I (very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part – II (short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part – III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

UNIT - I

Introduction to PHP: Server side Scripting Vs Client Side Scripting, Evaluation of PHP, Features of Php, Basic Syntax, Variable and constant, Data types, Operators and Expressions

UNIT - II

Decision Making: If, Multiple Ifs, Nested Ifs, Loops (while, do...while, for loop, foreach), Nested Loops, Jumping Statement.
Arrays: Numeric, Associative and Multidimensional Arrays

UNIT-III

Strings: Creating and accessing String, Searching & Replacing String, Formatting String, String Related Library function, Pattern matching, Replacing text, Splitting a string with a Regular Expression

Functions: Defining a Function, Calling a Function, Parameter passing, Returning value from function

UNIT-IV

Form Data Handling: $_GET, $_POST, $_REQUEST Variables, Cookies handling, Session Management, URL encryption and security functions.
Exception Handling: Understanding Exception and error, Try, catch, throw

UNIT-V

File Handling: Opening and closing a file, Copying, renaming and deleting a file
Database Handling: Connection with MySql Database or ODBC, Performing basic database, operation (Insert, Delete, Update, Select), Setting query parameter.

References

1. PHP, The CompleteReference, Steven Holzner, TMH
2. Beginning PHP 5.3, Matt Doyle, John Wiley & Sons

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BCA306 (C): Linux and Shell Programming

Question Paper pattern for Main University Examination   *Max Marks: 100*

Part – I (very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part – II (short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part – III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

UNIT-I

The Operating System: Linux history, Linux features, Linux distributions, Linux's relationship to Unix, Overview of Linux architecture, Installation, Booting, Login and Shutdown Process, Start up scripts, controlling processes, system processes (an overview,

command line. Introduction to Linux Security.

UNIT-II

The Linux File System; Basic Principals, Pathnames, Mounting and Un-mounting File Systems, Different File Types, File permissions, Disk Usage Limits, Directory Structure, Cheek and Repair File Systems Security and file permissions. Shells in Linux.

UNIT-III

Filter-The grep family, advanced filters-sed and awk vi editor: General startup of vi editor and it modes, Creating and editing files, features of vi, screen movement, cursor movement insertion, deletion searching, submitting operations, yank put, delete commands reading & writing files.

UNIT - IV

Shell: meaning and purpose of shell, introduction to types of shell. the command line, standard input and standard output, redirection pipes, filters special characters for searching files and pathnames.

UNIT-V

Shell programming shell Meta character local and global shell variables- interactive shell scripts – shell script arguments- looping and making choice- for loop, case, while and until, shell functions eval.

Recommended reference/Text Books:

1. Beginning Linux Programming N, Mathew, R. Stones, Wrox, Wiley India Ed.
2. Peterson Richard, " The Complete Reference Linux " Tata McGraw Hill.
3. Simitabha Das, "Unix/Linux Concepts & Applications". Tata McGraw Hill
4. Yshavant P. Kanetkar, Shell Programming
5. Linux System Programming, Robert Love. O" Reilly SPD.
6. Vijay Shekhar; Red hat Linux study guide firewall media
7. Richard Petersen. The Complete Reference , Linux, TMH

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BCA 307: Networking Laboratory

Practical Lab Exercises based on Theory Paper BCA -303

BCA 308: Core Java Laboratory

Practical Lab Exercises based on Theory Paper BCA- 304

Elective Laboratory (Any one from BCA-309)

BCA309(A): ASP.NET

Practical Lab Exercises based on Theory Paper BCA -309(A)

BCA309(B):PHP

Practical Lab Exercises based on Theory Paper BCA- 309(B)

BCA309(C):Linux OS and Shell Programming

Practical Lab Exercises based on Theory Paper BCA- 309(C)

BCA-310: Project

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BCA 310: Project

Examination Time : Three Hours
Maximum Marks : 100

Guidelines for preparing the Project Report (BCA-310)

I. Objective: Student should able to develop a small real time application using any Programming Languages which is part of their course curriculum or any new upcoming Programming Language.

II. Guidelines regarding project:
1. Students should work in group. Minimum number of students in one group can be 2. Maximum number of students in one group can be 4.
2. Students will be working under supervision of one teacher.
3. Students will submit a synopsis of the project.
4. Two copies of the report should be submitted.
5. The reports should be spiral bound along with the soft copy of the project.
6. The reports should be submitted with the following guidelines in the prescribed format.
   - Paper size : A4
   - Margins : Left 1.5, Right, Top and Bottom 1 inch
   - Font : Times New Roman
   - Chapter Heading : 16pt
   - Sub Heading : 14, Sub-Sub Headings: 12 Bold
   - Running Matter : 12 pt
   - All topics should be numbered accordingly.
   - Paragraph Gap : 6 Pt Maximum
   - Line Spacing : 1.5

III: Top Page

<div style="border:1px solid">

<center><Title of Project Work></center>

Project report submitted in partial fulfillment of the requirement for the award of the Degree of Bachelor of Computer Application

<center>By</center>
<center><Name of the Candidate></center>
<center>Roll No.</center>
<center>Enrollment No. :</center>
<center>Session: <Session></center>

<center><University Logo></center>

<center>< Name of the Constituent/ Affiliated College></center>
<center>University of Rajasthan</center>
<center>Jaipur</center>

</div>

Second Page

<center>Certificate</center>

This is to certify that the project report entitled .... being submitted by Mr/Mrs........ in partial fulfilment for the award of the Degree of Bachelor of Computer Application to the University of Rajasthan is a record of bonafied work carried out by himself/herself under my guidance and supervision.

The results embodied in this project report have not been submitted to any other University or Institute for the award of any Degree or Diploma.

(HOD)

Guide Name
Designation

Raj [Vas]

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Third Page

The third page may include the Certificate given by Organization or Company where candidate has done his/her project.

Fourth Page

The fourth page should contain the declaration by the students (see the sample format)

<div style="border: 1px solid black; padding: 10px;">

DECLARATION

This is to certify that the work reported in the present project entitled "**<Title Of The Project Work>**" is a record of work done by me in the <Department Name>, <Name of the College/ Organization>. The reports are based on the project work done entirely by us and not copied from any other source.

Signature of Candidate
<Mr. / Ms. Name of the Student >
Class:
Roll No.
Enrolment No.
Session:

</div>

Fifth Page

The fifth page may include the Acknowledgement.

Sixth and Seventh Page

In this page, a table of contents, list of tables, list of figures must be provided.

Eighth Page

The eighth page should contain an abstract of the Project report. The candidate may emphasize here his/her contributions in the project.

<div style="border: 1px solid black; padding: 10px;">

NOTE: All the above pages are to be numbered in Roman numerals of lower case. Ex. i, ii, iii, iv, ... except the top page.

</div>

The following is suggested format for arranging the project report matter into various chapters:
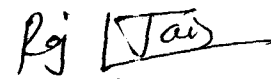
1. Introduction
   This chapter must describe introduction about your project.
2. Literature Survey/Review of Literature
3. Define the problem.
   Define the modules and their functionalities
   Hardware / Software requirements
4. System Design and Implementation
   /* Actual Implementation of the problem should be described in this chapter. */

   The design part must include the following items
     o DFDs in case of Database projects

     o UML diagrams. This UML diagrams must include the following
     o Class Diagrams
     o Interaction diagrams-Sequence and Collaboration diagrams
     o Object Diagrams
     o Use case diagrams
     o Control Flow diagrams
     o Database Design
     o

   In Case of a database projects, the report must include the following items.
     o E-R Diagrams
5. Results and Discussions
6. Conclusions & Future Enhancements / Recommendations
7. References / Bibliography
8. Appendices (if any)