## SEMESTER-V

## COURSE 12: ADVANCED CORPORATE ACCOUNTING

Theory Credits: 3 3 hrs/week

**Learning Objectives**

The course aims to help learners to acquire conceptual knowledge of purchase of business and amalgamation of companies. They able to understand the accounting procedure of liquidation and corporate accounting procedures.

**Learning Outcomes**

After completing the course, the student shall be able to:

Understand Corporate Accounting environment and record transactions related to Purchase of Business, Amalgamation and Reconstruction. Analyze the situations of Purchase of Business and Liquidation and create formulas and calculations relating to Amalgamation, Internal Reconstruction and Holding company accounts. Acquire skills of Accounting Procedure of Advanced Corporate Accounting Environment.

**Unit 1: Purchase of Business:** Meaning - Purchase Consideration - Methods for determining Purchase Consideration-Discharge of Purchase Consideration-Accounting Treatment.

**Unit 2: Amalgamation of Companies:** Meaning and Objectives - Provisions for Amalgamation of Companies as per Accounting Standard 14 - Accounting Treatment.

**Unit 3: Internal Reconstruction of Companies :** Meaning - Forms of Internal Reconstruction - Alteration of Share Capital and Reduction of Share Capital- Accounting Treatment.

**Unit 4: Accounts of Holding Companies:** Meaning of Holding Companies and Subsidiary companies- Consolidated Financial Statements- Legal requirements on Consolidation-Calculation of Minority Interest- Accounting Treatment.

**Unit 5: Liquidation:** Meaning - Modes of Winding up of a Company- - Liquidator's Final Statement of Account - Calculation of Liquidator's Remuneration - Preparation of Statement of Affairs and Deficiency Account- Accounting Treatment

**Activities:**

- Students are asked to identified real time situations with respect to Amalgamation, Liquidation, Purchase Consideration and submit report..

- Assignments including technical assignments like Working with Audit Company for Observation of Purchase Consideration and Observation of recent Amalgamations in Banking Sector and Corporate Sector
- Seminars, Conferences, discussions by inviting concerned institutions
- Field Visit
- Invited Lectures and presentations on related topics

**Reference Books:**


1. Goyal, Bhushan Kumar. Corporate Accounting. Taxmann, New Delhi
2. Kumar, Alok. Corporate Accounting. Kitab Mahal
3. Monga, J. R. Fundamentals of Corporate Accounting. Mayur Paper Backs, New Delhi
4. Sah, Raj Kumar, Concept Building Approach to Corporate Accounting, Cengage
5. Sehgal Ashok & Sehgal Deepak. Corporate Accounting
6. Tulsian P. C. Corporate Accounting. S Chand & Co. New Delhi
7. *https://thebookee.net/ad/advanced-corporate-accounting-and-accounting-standards*
8. Web resources suggested by the Teacher concerned and the College Librarian including reading material

## SEMESTER-V

## COURSE 12: ADVANCED CORPORATE ACCOUNTING

Practical Credits: 1 2 hrs/week

### Lab Exercise:

- Preparation of Financial Statements of Companies before and after amalgamation with Accounting Software
- Preparation of Balance Sheet of Companies before and after Internal Reconstruction with Accounting Software
- Preparation of Consolidated Balance Sheet of Holding and Subsidiary Companies using Accounting Software
- Preparation of Statement of Affairs-Deficiency Account-Surplus Account of a Liquidating Company in Microsoft Excel

## SEMESTER-V

## COURSE 12: ADVERTISING AND MEDIA PLANNING

Theory Credits: 3 3 hrs/week

**Learning Objectives**:
The objective of this paper is to help students to acquire knowledge on advertising and media planning and to acquire skills in creating and developing advertisements.

**Learning Outcomes:**
At the successful completion of the course students are able to:
Understand the role of advertising in business environment and understand the legal and ethical issues in advertising. Acquire skills in creating and developing advertisements and understand up-to-date advances in the current media industry. Acquire the necessary skills for planning and advertising media campaign.

**Unit 1: Introduction:** Advertising- Nature and Scope- Functions - Impact on Social, Ethical and Economical Aspects - Its Significance – Advertising as a Marketing Tool and Process for Promotion of Business Development - Criticism on advertising

**Unit 2: Strategies of Advertisements:** Types of Advertising Agencies and their Strategies in Creating Advertisements - Objectives - Approach - Campaigning Process - Role of Advertising Standard Council of India (ASCI) - DAGMAR approach

**Unit 3: Process of Advertisement:** Creativeness and Communication of Advertising –Creative Thinking – Process – Appeals – Copy Writing - Issues in Creation of Copy Testing –Slogan Elements of Design and Principles of Design

**Unit : Media Planning:** Advertising Media - Role of Media - Types of Media - Print Media - Electronic Media and other Media - Advantages and Disadvantages – Media Planning - Selection of Media.

**Unit 5: Analysis of Market Media:** Media Strategy – Market Analysis -Media Choices **-** Influencing Factors - Target, Nature, Timing, Frequency, Languages and Geographical Issues - Case Studies

**Activities:**

- Students shall individually choose a local or regional advertising agency, visit, study it's processes, strategies, business aspects etc. and has to submit his/her Report not exceeding 10 pages in the given format to the teacher.

- Max marks for Fieldwork/Project work Report: 05**.**
- Unit tests (IE).
- Survey on existing products advertisements
- Creation of advertising on several products
- Invited Lectures
- Hands on experience with the help of field experts
- Debates, Seminars, Group Discussions, Quiz, etc.
- Assignments, Case studies, Compilation of paper cuttings, Preparation of related videos, Class exhibitions

**Reference Books:**

1. Bhatia. K.Tej - Advertising and Marketing in Rural India - Mc Millan India

2. Ghosal Subhash - Making of Advertising - Mc Millan India

3. Jeth Waney Jaishri& Jain Shruti - Advertising Management - Oxford university Press

4. Advertising Media Planning, Seventh Edition Paperback – by Roger Baron (Author), Jack Sissors (Author)

5. Media Planning and Buying in 21st Century – Ronald DGeskey

6. Media Planning and Buying: Principles and Practice in the Indian Context – Arpita Menon

7. Publications of Indian Institute of Mass Communications

8. Advertising and Salesmanship. P. Saravanavel, Margham Publications

9. Publications of ASCI

## SEMESTER-V

## COURSE 12: ADVERTISING AND MEDIA PLANNING

Practical Credits: 1 2 hrs/week

### Lab Exercise:

Creating an online advertisement using MS office or Computer tools.
Selection of Product or Service - Target your Competitors -Creating Brand Image - Develop a theme with slogan - identify core group - priorities message- Media Selection
Creation of Advertisement using MS Word or the PPT
Creation of Shorts and Videos in YouTube
Uploading Reels and Stories in Face book and instagram

## SEMESTER-V

## COURSE 13: STOCK MARKETS

Theory Credits: 3 3 hrs/week

**Learning Objectives**:

The objective of this paper is to help students to acquire knowledge on concept of Financial Market and ability to understand the terminologies associated with the field of Financial Market and control along with their relevance. To impart awareness on Primary and Secondary Market, Stock Exchange, SEBI etc.

**Learning Outcomes:**

By the completion of the course, the students will be able to

Expose to theory and functions of the Share Market in Financial Sector as job careers and 2. Study the functioning of capital markets and create awareness among the public. Acquire knowledge on operations of Share Market and Research skills and involve in activities of Mutual Funds and stock market firms. Enhance their skills by practicing in preparation of accounting statements

**Unit 1: Introduction,:** Nature, Scope and basics of stock market**,** Need of Investment-Short and Long Term investment- Money market Vs Capital Market-Primary Market-Secondary Market - Types of Investors- Speculators, Hedgers, Arbitragers.

**Unit 2: Capital Markets:** Definition, Participants of Capital Market, Participants of Primary Market, issues of Equity Shares , Preference Shares and Debentures .Types of Mutual Funds. Secondary Market -Stock Exchange - National Stock Exchange of India.

**Unit 3: Financial Intermediaries:** Depositories -Buy Back of Shares-- Forward Contract and Future Contract- differences –Participants in Future Contract- Clearing of Mechanism.

**Unit 4: Stock Indices:** Index and its types-SENSEX- Calculation Methodology-Types of Clearing Members.

**Unit 5: Regulatory Mechanism: Security** and Exchange Board of India (SEBI)-Powers, functions - Over the Counter Exchange (OTCE) of India-Functions and Mechanism.

**Activities:**

- Students shall **i**ndividually study the work of stock market professionals and agencies and make observations and Report to the teacher.
- Training of students by a related field expert.

- Assignments (including technical assignments like identifying the investors and their activities in share markets
- Seminars, Conferences, discussions by inviting concerned institutions
- Visits to local Investment Institutions, offices,
- Invited lectures and presentations on related topics by field experts.

**Reference Books:**

1. I.M.Pandey. ,Financial Management, Vikas Publishing House
2. Prasanna Chandra, Fincial Management TaTa Mc Graw Hill
3. Bhole.L.M. Financial Markets and Institutions, Tata McGraw Hill Publishing House
4. Khan MY,Jain PK, Financial Management, Tata McGraw Hill
5. Kishore Ravi.M., Financial Management, Taxman Publication

## SEMESTER-V

## COURSE 13: STOCK MARKETS

Practical Credits: 1 2 hrs/week

### Lab Exercise:

- An Introduction. Practical aspects and background of Depositaries: NSDL, CSDL. Statements: Holding Statement, Transaction Statement. Dematerialization Procedure
- DEMAT: Account Opening Procedure, Nomination Practices; Offline Demat Account & Online Demat Account.
- Clearing & Settlement Procedure Delivery Instruction Slip Practices for Depositary Participants & Beneficial Owner.
- Introduction to Equity Market. Stock Exchanges of Equity in India: NSE, BSE & USE. Types of Market:- Equity, Derivatives and Debt Market.
- Trader Work Station -User Interface. Practical terminology of Work Stations.
- Functions/Keys following in using Trader Work Station: Market Watch, Activity Log, Order Status, Market Movement, Security descriptor, Market by Price.
- Practical Procedure to buy/Sell Shares; Settlement Procedures. Composition of Sensex and Nifty.

**Note:** The Simulation Lab of the market will be based on any one of the following Trader Work Station: 1.Trader Work Station— NEST Trader by Owneys. 2.TCS Trader Work Station 3. ODIN

## SEMESTER-V

## COURSE 13: GOODS AND SERVICES TAX WITH TALLY

Theory Credits: 3 3 hrs/week

### Learning Outcomes

After completing the course, the student shall be able to:

1. Understand the concept of Liability and Payment of GST
2. Create a new company in Tally with GST components and establish environment for GST Voucher entry.
3. Comprehend the utilization of input tax credit, and the reverse charge mechanism in GST
4. Acquire Skills of preparation of GST Returns in accordance with GST Law and Tally
5. Acquire skill of online payment of GST through GST Portal.

**Unit 1: Introduction:** Overview of GST - Concepts –Taxes Subsumed under GST –Components of GST- GST Council- Advantages of GST-GST Registration.

**Unit 2: GST – Accounting Masters and Inventory Masters in Tally :** Company Creation- General Ledgers & GST Ledgers Creation - Stock Groups , Stock Items and Unit of Measure - GST Rate Allocation to Stocks

**Unit 3: GST Voucher Entry:** GST Vouchers - Customizing the Existing Voucher types with applicable GST Rates –Mapping of Input Tax Credit on Purchase Vouchers - Output Tax on Sales Vouchers- Purchase and Sales Voucher Entries with Single Rated GST and Multiple Rated GST Goods.

**Unit 4: GST Returns:** Regular Monthly returns and Annual Return- Returns for Composition Scheme- Generation of Returns - GSTR-1, GSTR-2, GSTR-3, GSTR-4, GSTR-9, GSTR-3B

**Unit 5: Payment of GST online:** Payment of GST- Electronic Filing of GST Returns – Refunds – Penalties- Administrative structure of GST Officers- Powers- Jurisdiction.

### Activities

- Seminars
- Practice of Terminology of Goods and Service Tax
- Prepare chart showing rates of GST
- Follow GST Council meeting updates regularly
- Creation of GST Vouchers and Tax invoices
- Visit a Tax firm (Individual and Group)
- Guest lecture by GST official

- Prepare Tax invoice under the GST Act.
- Practice on how to file a Returns
- Debate on Single GS, Dual GST
- Group Discussions on Goods and Services outside the Purview of GST

**References:**

1. Ahuja, Girish, Gupta Ravi, GST & Customs Law.

2. Babbar, Sonal, Kaur, Rasleen and Khurana, Kritika. Goods and Service Tax (GST) and Customs Law. Scholar Tech Press.

3. Bansal, K. M., GST & Customs Law, Taxmann Publication.

4. Singhania,Vinod K. and Singhania Monica. Students' guide to Income Tax. University Edition. Taxmann Publications Pvt Ltd.,New Delhi.

5. Sisodia Pushpendra, GST Law, Bharat Law House.

6. ***Web resources***:https://cbic-gst.gov.in

7. Web resources suggested by the Teacher concerned and the College Librarian including reading material

## SEMESTER-V

## COURSE 13: GOODS AND SERVICES TAX WITH TALLY

Practical Credits: 1 2 hrs/week

### Lab Exercise:

- Create Company and with GST and Create duty ledgers in the Tally
- Create stock item with GST and Sales and Purchases vouchers with GST in tally
- Reverse charge mechanism under GST and GST returns in Tally GSTR-1 and GSTR-3B
- Registration of dealer under GST, Regular dealer and Composite dealer
- GST returns for Composite dealer GST CMP-08 and Annual return for composite dealer GSTR-4
- GST returns for Regular dealer GSTR-1 and Reconciliation of GSTR2B, Actual input tax credit as per Books and Regular dealer GSTR -3B
- DRC 03-voluntary tax payments and Regular dealer Annual returns GSTR 9

## SEMESTER-V

## COURSE 14: BUSINESS ANLYSTICS

Theory Credits: 3 3 hrs/week

**Course Objectives:**

The course aims to help learners to acquire knowledge on Business Analytics and explain why Business Analytics is important. State some typical examples of Business Applications and differentiate between OLAP and OLTP. Explain the concepts of Business Intelligence and understand different types of Analytics Differentiate between Data Mining and Machine Learning Concepts

**Learning Outcomes:**

After Completing this course, the students will be able to
Understand business analytics and develop business intelligence. Analyze data using statistical and data mining techniques for business intelligence. Understand case studies for predictive models. Expertise in OLAP Tools. Apply different Analytic Techniques

**Unit 1: Business Analytics:** definition, Components of Business Analytics, Types of Business Analytics methods, Benefits of Business Analytics, Business Analytics Tools, Applications of Business Analytics, Trends in Business Analytics

**Case Study**:

1. Retail Analytics
2. Marketing Analytics

**Unit 2: Descriptive Analytics, Statistics:** Types of Statistics, Types of Data, Measure of Central Tendency: Mean, Median, Mode, Standard Deviation, Variance

**Case Study**:

1. Financial Analytics
2. Social Media and Web Analytics

**Unit 3: OLAP, OLAP Operations:** Roll Up, Drill Down, Slice and Dice, Pivot, Types of OLAP, OLAP Tools, OLTP, Characteristics of OLTP, OLTP advantages and disadvantages,

**Case Study:** Working with any one of the OLAP Tools

**Unit 4**: Architecture and Components of Business Intelligence, Business Intelligence for Management, Operational BI,What is Business Intelligence, Benefits of BI, Roles and Responsibilities of BI, Overview of Popular BI Tools in Market

**Case Study:** Real-Time Credit and Debit Card Fraud Detection, an HPE Shadowbase

**Unit 5:** Data Mining Concept, Concepts of data mining model with its development and deployment in business scenario, Types of Data Mining Models, Machine Learning: definition, How ML works, Features and Importance of ML, Machine Learning Concepts: Classification of ML

**Case Study:** Healthcare Analytics

**Text Books:**

1. Module 5, Business Data Analytics by IBM
2. Essentials of Business Analytics: An introduction to the methodology and its applications by Bhima sankaram P, Sridhar S

## SEMESTER-V

## COURSE 14: BUSINESS ANLYSTICS

Practical Credits: 1 2 hrs/week

## LIST OF EXPERIMENTS

1. Draw the diagram showing the types of Variables with examples.
2. Differentiate between Numerical and Categorical Variables.
3. What are Named variables? Using Ms-Excel, create a list of 10 named variables and add the numbers automatically.
4. What is a Ratio Variable? State the importance of Ratio Variable in Data Analytics.
5. Explain the Data Table in Excel. Create a One Variable Data Table in Excel.
6. What is a two Variable Data Table? Write steps to create a Two Variable Data Table.
7. Write steps for analyzing a Data Table with Multiple Formulas in Excel.
8. How do you Create, Rename, Recode, and Merge Variables in R?
9. Write steps to create Your Name, Age, Class, and College Name in R.
10. Draw a Chart for R- Variables.
11. Find the Average Price of given items using MS-Excel.

| | |
|---|---|
| Rice Bag Ashirwad | 1450 |
| Rice Bag India Gate | 1200 |
| Sona's Sona Masurie | 1300 |
| Kohinoor Rice | 1100 |
| Aabida Basmati Rice | 1400 |
| Indian Valley | 1250 |
| Mannat Rice | 1200 |
| Shaalimaar Rice | 1425 |

12. Using Ms-Excel, find the Median Value of the following items.

| **Items** | **Status** | **Amount Rs.** |
|---|---|---|
| Banana | Delivered | 758 |
| Apple | Cancelled | 258 |
| Cherry | In-transit | 587 |
| Banana | Delivered | 495 |
| Banana | Cancelled | 687 |
| Apple | Delivered | 258 |
| Cherry | Delivered | 684 |

13. Find the most frequently ordered Quantity from a supermarket store in MS-Excel.

| **Products** | **Quantity** | **MRP (Rs.)** |
|---|---|---|
| Tang Orange Flavour | 5 | 1050 |
| Rasna Orange | 6 | 1200 |
| RoohAfza | 5 | 1800 |
| Tang Apple | 10 | 1200 |
| Rasna Green Apple | 5 | 1700 |
| Tang Cocktail | 5 | 1400 |
| Jaljeera | 15 | 120 |

14. Find the Highest and Lowest Marks of Students obtained in English using Ms-Excel.

| | |
|---|---|
| Himabindu | 85 |
| Karthik | 15 |
| Renuka | 78 |
| Mallika .S | 15 |

| | |
|---|---|
| Ashok Jaiswal | 100 |
| Billu Yadav | 75 |
| Girish J. | 50 |
| Sarika | 05 |

15. Find the Geometric and Harmonic Mean Wages from the following data using Ms-Excel.

| **Job** | **Wages (Rs. )** |
|---|---|
| Electrician | 200 |
| Nurse | 500 |
| Sales Manager | 540 |
| Manufacturing Engineer | 540 |
| Celebrity | 450 |
| Beautician | 480 |
| Data entry operator | 350 |
| Plumber | 240 |

16. Using Ms-Excel, calculate Standard Deviation of total sales from the given data.

| **Total Sales (Rs.)** | **Branch** |
|---|---|
| 258000 | Delhi |
| 485220 | Mumbai |
| 875010 | Kolkata |
| 235461 | Hyderabad |
| 875212 | Indore |
| 785223 | Surat |
| 345621 | Pune |

17. Find Q1 and Q3 and also Quartile Deviation from the following information in Ms-Excel.

| S. No. | Value |
|---|---|
| 1 | 145 |
| 2 | 254 |
| 3 | 156 |
| 4 | 354 |
| 5 | 253 |
| 6 | 253 |
| 7 | 245 |
| 8 | 892 |
| 9 | 242 |
| 10 | 268 |

18. Find the Quartiles from the following data in Ms-Excel.

| Height (in inches) | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 |
|---|---|---|---|---|---|---|---|---|---|
| No. of Persons | 2 | 3 | 6 | 15 | 10 | 5 | 4 | 3 | 1 |

19. Compare and find the Range of 10 Students' marks in Mathematics and Statistics using Ms-Excel.

| Maths | 25 | 40 | 30 | 35 | 21 | 45 | 23 | 33 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Statistics | 30 | 39 | 23 | 42 | 2 | 40 | 25 | 30 | 18 |

20. Calculate Variance from the following data in MS-Excel.

X: 10, 11, 17, 25, 7, 13, 21, 10, 12, 14

## SEMESTER-V

## COURSE 14: CYBER SECURITY

Theory Credits: 3 3 hrs/week

**Course Objectives**:

The aim of this course is to help the learner to understand key terms and concepts in cyber security. The Learner will learn to secure clean and corrupted systems, protect personal data, and secure computer networks. The Learner will be able to examine secure software development practices and gain an understanding of cryptography, how it has evolved, and some key encryption techniques used today.

**Learning Outcomes**:

The students will be able to:

Analyze and evaluate the cyber security needs of an organization. Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation. Measure the performance and troubleshoot cyber security systems. Implement cyber security solutions and use of cyber security, information assurance, and cyber / computer forensics software/tools. The Learner will develop an understanding of security policies (such as confidentiality, integrity, and availability) and protocols to implement such policies and will gain familiarity with prevalent network and distributed system attacks, defenses against them, and forensics to investigate the aftermath.

**Unit 1: Cyber Security Fundamentals:** Network Security Concepts: Information Assurance Fundamentals, Basics of Cryptography: Symmetric and Asymmetric, DNS, Firewalls, Virtualization, Radio-Frequency Identification Microsoft Windows Security Principles: Windows Tokens, Window Messaging, Windows Program Execution, Windows Firewall

**Case Study**: Install any Virtualization Software and perform various tasks

**Unit 2: Attacker techniques and motivations:** Anti forensics, Tunneling Techniques, Fraud Techniques, and Threat Infrastructure

**Case Study**: Working with Free and commercial proxies available from web-hack.ru.

Unit 3: Exploitation: Techniques to gain a Foothold, Misdirection, Reconnaissanse, and Disruption Methods

**Case Study**: Working with SQL Injection attacks and DDoS attacks

**Unit 4: Malicious Code:** Self-Replicating Malicious Code, Evading Detection and Elevating Privileges, Stealing Information and Exploitation.

**Case Study**: Identify latest Malwares and differentiate different types of malwares

**Unit 5: Defense and Analysis Techniques:** Memory Forensics, Honeypots, Malicious Code Naming, Automated Malicious Code Analysis Systems, Intrusion Detection Systems

**Case Study**: Identify latest Anti-Virus Softwares in the market and compare the functionality of each Anti-Virus

**Text Books**:

1. Cyber Security Essentials by James Graham, Richard Howard, Ryan Olson, CRC Press
2. Introduction to Cyber Security by Jeetendra Pandey
3. Cryptography and Network Security by William Stallings

**References:**

Cyber Security for Beginners by Heimdal® Security - Proactive Cyber Security Software (heimdalsecurity.com)

## SEMESTER-V

## COURSE 14: CYBER SECURITY

Practical | Credits: 1 | 2 hrs/week

**Assignment 1:**

1. What is the command used for finding host/domain name and IP address?
2. What is the command will display the assigned IP address of ETHERNET adapter?
3. What is the command used for checking the network connectivity?
4. What is the command used for finding all the ip addresses of a given domain name?
5. What is the command used for finding connection to and from the host?
6. What is the command used to view user information, user's login name, real name terminal name and write status ?
7. What is the command used for mapping name to IP addresses?
8. What is the command used for connecting to a host on a particular port?
9. What is the command used to make a connection to a remote machine and execute programs as if one were physically present ?
10. What are the text based web browsers available through command line?

**Assignment 2:**

1. What is the command used for downloading a website for off-line view ?
2. What is the command used for displaying or manipulating the ARP (Address Resolution Protocol) information on a network device or computer. ?
3. What is the command used for checking/starting/stopping networking services, users, messaging, configuration and so on...?
4. What is the command a packet filtering configuration program used for manipulating net filter kernel based firewall?
5. What is the command used for showing network statistics?
6. What is the command used for displaying and manipulating routing table ?
7. What is the command used to monitor access control for supported services ?
8. What is the command used to view network traffic?
9. What is the command used to change your hostname ?
10. What is the command used for an interface IP address ?

**Assignment 3:**

1. What is the command used for controls access to daemons at the application level, rather than at the IP level?
2. What is the command used for connecting to a host with encryption?
3. In what is the file, we can find the local look up server used by the browser. 4. Command used to find out the intermediate nodes between the host and the server is.

5. What is the command used to find out the intermediate domain name nodes between the host and the server?
6. Command used to follow all the information a DNS server has about a particular domain
7. The command get documents/files from or send documents to a server
8. How to check if a particular interface is up and running?
9. This command used to list info about machines that respond to SMB name queries (for example windows based machines sharing their hard disks).
10. This command used to look up the contact information from the “who is” databases, the servers are only likely to hold major sites. Note that contact information is likely to be hidden or restricted as it is often abused by crackers and others looking for a way to cause malicious damage to organizations.
11. It allows you to send and receive files between two computers.
12. Another part of the ssh package. This command similar to ftp but uses an encrypted tunnel to connect to an ftp server and is therefore more secure than just plain ftp.
13. Part of the ssh package. Allows you to copy files from one computer to another computer.
14. nfs - nfsfstab format and options
15. where to look to find out the services What is the are available to the system .
16.where to look to find out the list of protocols What is the are available to the system along with their port numbers .
17. To listing the iptables of your linux system.
18. How to know if a service is running or not.
19. How to Enable IP Forwarding in Linux

**Assignment 4:**

1. Study of Wireshark Manual.

**Assignment 5 :**

Perform the following using Wireshark

1. Identify the first 2 packets (i.e. their packet numbers) containing HTTP GET request.
2. What webpage was visited in the above 2 packets?
3. What version of HTTP was used?
4. What is the destination IP address in the above packets?
5. List the source and destination ports of the packets travelling from the client to this server in the above packets?
6. In the HTTP server’s response, look at the information sent about the server. What server software was used?
7. What are the IP addresses of the server?

**Assignment 6:**

Perform the following using Wireshark.

1. What are the MAC addresses of the client and server?
2. How many WebPages (not websites) have been opened?
3. What is the time difference between first HTTP GET and the first HTTP response (OK)?
4. Count the total number of HTTP GET requests.
5. What is the time difference between the first and last HTTP GET requests? Hint: Follow a similar procedure as mentioned previously.
6. How may packets were exchanged between the server (corresponding to the both IP addresses) and the client?

(Note: Their sum must be equal to the total no. of packets)

7. Find the total no. of HTTP requests sent by the host spongebob.wikia.com.

**Assignment 7:**

1. SQL Injection Implementation and Execution.

**Assignment 8:**

1. Give a short note on OSSEC?
2. What are the components of OSSEC
3. List the few key features of OSSEC.
4. What are the types of agent in OSSEC?
5. What are the roles of Manager (server) and an Agent in OSSEC?
6. What is Syscheck in OSSEC?
7. What is LIDS and HIDS?

**Assignment 9:**

1. What is the type of log used by pflogsumm?
2. What is the type of log used by webalizer?
3. What are the different types of logs used by AWStats?
4. Pflogsumm analyzes is a mail/weblog or both?
5. Webalizer analyzes is a mail/weblog or both?
6. Command line option used for increment log analysis, mention domain name and squid log file with webalizer.
7. AWStats tools written in What is the language?

**Assignment 10:**

1. Steps for setting up Cyber Security in organization.

**References for All Assignments:**


1. http://www.ossec.net/
2. www.linuxmanpages.com/man1/pflogsumm.1.php
3. www.webalizer.org/
4. http://www.computersecuritystudent.com/SECURITY_TOOLS/DVWA/

## SEMESTER-V

## COURSE 15: MOBILE APPLICATON DEVELOPMENT USING ANDROID

Theory Credits: 3 3 hrs/week

**Course Objectives:**

The course aims to help learners to acquire conceptual knowledge of understanding Android SDK . To help students to gain a basic understanding of Android application development and instill working knowledge of the Android Studio development tool

**Course Outcomes:**

The student will be able to:

Identify various concepts and features of Android operating system. Configure Android environment and development tools. Develop rich user Interfaces by using layouts and controls. Use User Interface components for android application development. Create Android application using database. Publish Android applications.

**Unit 1: Introduction to Android:** - Overview, History, Features of Android, The Android Platform, Understanding the Android Software Stack – Android Application Architecture –The Android Application Life Cycle – The Activity Life Cycle, Creating Android Activity -Views-Layout Android SDK, Android Installation, Building you First Android application, Understanding Anatomy of Android Application, Android Manifest file.

**Case Study:**

1. Give a brief description of Android Architecture and its parts.
2. List out the challenges we face while using Android?
3. List the new features of Android in the latest version.

**Unit 2: Android Application Design Essentials:** Anatomy of an Android applications, Android terminologies, Creating User Interfaces with basic views- Application Context, Activities, Services, Intents, linking activities with Intents,, Receiving and Broadcasting Intents, Android Manifest File and its common settings, Using Intent Filter, Permissions.

**Case Study:**

1. Present an idea that you would like to convert it into an application in the future.

**Unit 3: Android User Interface Design Essentials**: User Interface Screen elements, Designing User Interfaces with Layouts, Drawing and Working with Animation. Layouts, Recycler View, List View, Grid View and Web view

**Input Controls:** Buttons, Checkboxes, Radio Buttons, Toggle Buttons, Spinners, Input Events, Menus, Toast, Dialogs, Styles and Themes, Creating lists, and Custom lists.

**Case Study:**

1. Present detail report on the features of Check Boxes, Radio Buttons and Toggle Buttons.

**Unit 4: Testing Android applications:** Publishing Android application, Using Android preferences, Managing Application resources in a hierarchy, working with different types of resources.

**Case Study**:

1. List out the special features of Android with its counterparts.

**Unit 5: Using Common Android APIs**: Internal Storage, External Storage, SQLite Databases, Managing data using Sqlite, Sharing Data between Applications with Content Providers, Using Android Networking APIs, Using Android Web APIs, JSON Parsing, Using Android Telephony APIs, Deploying Android Applications to the World. Google Maps, Using GPS to find the current location, Sensors, and Bluetooth / Wi-Fi Connectivity.

**Case Study**:

1. List out the points to keep in mind to make you application more attractive.
2. List the controls that make you application attractive.

**REFERENCE BOOKS:**


1. Reto Meier, "Professional Android 2 Application Development", Wiley India Pvt Ltd
2. Mark L Murphy, "Beginning Android", Wiley India Pvt Ltd
3. "Android Application Development All in one for Dummies" by Barry Burd, Edition: I
4. "Android", Dixit, Prasanna Kumar Vikas Publications, New Delhi 2014, ISBN: 9789325977884
5. Maclean David, Komatineni Satya,Allen Grant , "Pro Android 5", ApressPublications2015ISBN: 978-1-4302-4680-0
6. " Android Programming for Beginners" by Hortan, John, Packet Publication, 2015ISBN: 978-1-78588-326-2
7. Lauren Darcey and Shane Conder, "Android Wireless Application Development",Pearson Education, 2nd ed. (2011)


ONLINE READING / SUPPORTING MATERIAL:

1. http://www.developer.android.com
2. http://developer.android.com/about/versions/index.html
3. http://developer.android.com/training/basics/firstapp/index.html

4. http://docs.oracle.com/javase/tutorial/index.htm (Available in the form of free downloadable ebooks also).
5. http://developer.android.com/guide/components/activities.html
6. http://developer.android.com/guide/components/fundamentals.html
7. http://developer.android.com/guide/components/intents-filters.html.
8. http://developer.android.com/training/multiscreen/screensizes.html Syllabus of BCA (Honours) under CBCS 33 9. http://developer.android.com/guide/topics/ui/controls.html
9. http://developer.android.com/guide/topics/ui/declaring-layout.html
10. http://developer.android.com/training/basics/data-storage/databases.html

## SEMESTER-V

## COURSE 15: MOBILE APPLICATON DEVELOPMENT USING ANDROID

Practical | Credits: 1 | 2 hrs/week

## LISTOFEXPERIMENTS:

1. Develop a program to implement frame layout, table layout and relative layout.
2. Develop a program to implement Text View and Edit Text.
3. Develop a program to implement Auto Complete Text View.
4. Develop a program to implement Button, Image Button and Toggle Button.
5. Develop a program to implement login window using the above U1 controls.
6. Develop a program to implement Checkbox.
7. Develop a program to implement Radio Button and Radio Group.
8. Develop a program to implement Progress Bar.
9. Develop a program to implement List View, Grid View, Image View and Scroll View.
10. Develop a program to implement Custom Toast Alert.
11. Develop a program to implement Date and Time Picker.
12. Develop a program to create an activity. Develop a program to implement new activity using explicit intent and implicit intent.
13. Develop a program to implement content provider.
14. Develop a program to implement service.
15. Develop a program to implement broadcast receiver.
16. Develop a program to implement sensors.
17. Develop a program to build Camera.
18. Develop a program for providing Bluetooth connectivity.
19. Perform CRUD operations using SQLite.
20. Develop a program for JSON parsing.

## SEMESTER-V

## COURSE 15: BLOCK CHAIN TECHNOLOGY

Theory | Credits: 3 | 3 hrs/week

### Course Objectives:

The course aims to help learners to acquire conceptual knowledge of Block Chain Technology. To Understand Security systems in Block Chain Technology. To acquire knowledge to applications of Block Chain Technology.

### Learning Outcomes:

The students will be able:

Identify various types of Software Architecture and understand types of Cryptography. Improve knowledge in understanding underlying technologies in Block Chain Technologies. Understand the storage methods and advantages and have knowledge on the applications of Block Chain

Unit 1: Layers of a Software System, Integrity, A Payment System, Types of Software Architecture, Purpose of the Blockchain, Peer-to-Peer system: Definition, Architecture, Link between Peer-to-Peer and Blockchain, Integrity Threats in Peer-to-Peer Systems, Four ways of Defining Blockchain, The purpose of the Blockchain, Blockchain Properties

**Case Study**: Identify Different Crypto Payments and Differentiate Them

Unit 2: Foundations of Ownership, Security Related concepts in Block chain, Purpose and Properties of a Ledger, Double Spending Problem, Designing and Developing a Software System, Documenting Ownership, Integrity of the Transaction History

**Case Study:** Study about Harbor, Ubitquity, Propy that are used in Real Estate

Unit 3: Hash Function in Block chain, Patterns of Hashing Data, Uses of Hash Values, Cryptography: Activities, Types of Cryptography, Digital Signatures

**Case Study:** Differentiate between various Blockchain Techniques used in Medical Field such as Ambrosus, Connecting Care, Farma Trust, MedRec

Unit 4: Transforming Book into Blockchain Data structure, Chaining Blocks of Data, Protecting the Data Store, Distributing the Data Store among Peers, Verifying and Adding Transactions

**Case Study:** How we Apply Blockchain Technology in Elections and Voting

Unit 5: Choosing a transaction History, Paying for Integrity, Technical Limitations of Blockchain, Conflicting Goals of the Blockchain, Characteristics of the Blockchain, Blockchain Applications, Blockchain Platforms

**Case Study:** Identify various Blockchain Technologies used in Entertainment

**Text Books:**

1. Blockchain Basics by: A Non-Technical Introduction in 25 Steps by Daniel Drescher, APress
2. Blockchain: Cybrosys Limited Edition

**Web References:**

1. 10 Blockchain Use Cases in Real Practical World | GoLinuxCloud
2. 33 Top Blockchain Applications to Know for 2023 | Built In
3. 15+ Practical Blockchain Use Cases in 2022 - 101 Blockchains
4. 30+ Real Examples Of Blockchain Technology In Practice (forbes.com)

## SEMESTER-V

## COURSE 15: BLOCK CHAIN TECHNOLOGY

Practical | Credits: 1 | 2 hrs/week

## LIST OF EXPERIMENTS

1. Creating and Building Up Crypto Token
2. Ethereum Smart Contract
3. Creating and Building Up Bitcoin Wallet
4. Introduction to Hyperledger
5. Creating a Business Network using Hyperledger
6. Creating a Business Network using Hyperledger- II
7. Building and Deploying multichain private Blockchain