

Rayat Shikshan Sanstha's



Sadguru Gadage Maharaj College, Karad

(An Autonomous College)

Affiliated to Shivaji University, Kolhapur

Department of Computer Science

Bachelor of Computer Application

B.C.A. Part-III

Semester - V & Semester – VI

Implemented from June-2021

BCA-III (Semester -V)
Paper No. 21-571: Management Accounting

Objectives: To make the students able to apply the techniques of Management Accounting

Unit – I

Introduction to Management Accounting: (10)

Meaning and Nature of Management Accounting, Role of Management Accountant in Planning, Controlling and Decision Making, Difference between Financial Accounting and Management Accounting, Tools and Techniques of Management Accounting

Unit - II

Financial Statement Analysis (10)

Importance of Financial Statement Analysis, Techniques of Financial Statement Analysis- Ratio Analysis, Classification of Ratios- Profitability Ratio, Turnover Ratios, Liquidity Ratios, Solvency Ratios.

Unit - III

Cost-Volume-Profit(CVP) (10)

Analysis and Decision Making- Break Even Analysis, Cost-Volume- Profit Analysis, Decision Making- Make or Buy Decisions, Shut Down or Continue Decisions, Alternative Course of Action etc.

Unit - IV

Budgetary Control (10)

Meaning of Budget and Budgetary Control, Objectives, Advantages, Limitations of Budgetary Control, Types of Budget- Production, Sales, Cash, Master Budget, Capital Expenditure, Budgeting

Reference Books:

1. Management Accounting By Khan and Jain
2. Principles of Management Accounting By Manmohan and Goyal
3. Principles of Management Accounting BY Maheshwari
4. Management Accounting By Pandey I.M.
5. Introduction to Management Accounting By Charles T. Homgren

Paper No.21-572: E-Commerce

Unit-I

Introduction

(12)

E-Commerce- Concept, Definition, Goals, Components and functions, Advantages and Limitations, Challenges and opportunities, E-Commerce models-C2C, C2B, C2G, B2C, B2B,B2G, EDI- Concept, components, Working mechanism of EDI, Advantages and disadvantages of EDI

Unit-II

Electronic payment System

(12)

Concept of e-payment, Difference between traditional and electronics payment system, Digital cash, Credit and Debit card system, Smart Card, Prepaid, postpaid and instant payment system, Electronic funds transfer, Concept of e-banking

Unit-III

E-Security

(12)

Concept of E-security, Security threats- concept and types, Malicious code, Phishing and identity theft, Hacking and cyber vandalism, Credit card fraud/Theft, Spoofing, Denial of service (DoS), Firewall and proxy server

Unit-IV

Security Solutions

(12)

Concept of encryption and decryption, Symmetric and asymmetric key encryption, Cipher text, Digital Envelopes, Digital certificates, Security socket layer(SSL), Limitations of encryption solutions.

References:

1. E-Commerce- Kenneth C. Laudon and Carol Guercio Traver
2. Internet marketing and E-commerce-Ward Hanson and Kirthi Kalyanam
3. E-Commerce Concepts , Models , Strategies by -- G.S.V. Murthy
4. E-Commerce by --Kamlesh K Bajaj and Debjani Nag
5. Electronic Commerce by --Gary P. Schneider
6. E-Commerce A Managers Guide, Ravi Kalkota

Paper- 21-573 Computer Network
UNIT –I

Basics of Data communication (12)

Data Communication concept, Components-sender, receiver, message, transmission media, Data Flow- simplex, half-duplex, or full-duplex, Networks, Definition, Advantages and disadvantages, Categories of Networks- LAN, WAN, MAN, Network Architecture-Client-Server and Peer to peer, Multiplexing and switching, Frequency-Division Multiplexing, Wavelength-Division Multiplexing, Time-Division Multiplexing, Circuit switching, Packet Switching, Message Switching

UNIT – II

Transmission media and Reference Models (12)

Transmission Media, Guided Media - Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable, Unguided Media: Radio Waves, Microwaves, Infrared, satellite communication, Transmission Modes- Parallel and Serial - (Asynchronous, Synchronous), Reference Models, OSI reference model, TCP/IP reference model, Comparison of OSI and TCP/IP reference model, Protocol Standards, IP address scheme and characteristics of IP address

UNIT-III

Data link, Network and Transport layer (12)

Data link Layer- 3.1.1 Design issues, Framing, error detection and correction, Network layer, design issues of network layer, Routing algorithm (shortest path, Flooding, distance vector,), Congestion control Transport layer, Transport Layer Primitives: listen, connect, send, receive, disconnect, Protocols: TCP,UDP

UNIT- IV

Session, Presentation and Application layer (12)

Session layer: Services: dialog management, synchronization, activity management, exception handling, Remote procedure calls, Presentation layer: Services: Translation, compression, encryption, Cryptography: concept, symmetric key & asymmetric key cryptography, Application layer: Function 4.3.2 Domain name system (DNS), Hypertext Transfer Protocol (HTTP), Simple Mail Transfer Protocol (SMTP), Telnet, File Transfer Protocol (FTP)

Reference Books-

1. Behrouz A. Forouzan- Data Communications And Networking - (4th edition) McGraw-Hill
2. Tanenbaum A.S. "Computer Network", 3rd Edition, Prentice Hall of India
3. Stallings W, "Computer Communication Network". (4th edition). Prentice hall of India 1993
4. Computer Networking: A top Down Approach Featuring in Internet by James F. Kurose & K. W. Ross

Paper No.21-574: RDBMS with Oracle

Unit - I

Relational Database Management System: (12)

Concept of RDBMS, Difference between DBMS and RDBMS, Features of RDBMS, Introduction of Oracle, Role and responsibilities of DBA, RDBMS Terminology-Relation, Tuple, Cardinality, Attribute, Degree, Primary Key, Domain, Codd's Rules, Relational Model, Functional Dependencies, Normalization and its types.

Unit - II

INTRODUCTION TO SQL: (12)

Features of SQL, Datatypes, Classification of SQL Commands—DDL(create, alter, drop), DML(insert, update, delete), DCL (grant, revoke), TCL (rollback, commit), SQL Integrity Constraints-(Primary key, Foreign key, unique key, not null, default, check), Select statement with group by and order by clause, SQL Operators-arithmetic, relational, Logical, Like, Between, IN operator, SQL Functions-Arithmetic functions, Conversion Functions, Date function, Aggregate functions, String functions.

Unit - III

JOIN AND SUBQUERIES: (12)

Join types - Inner Join, Outer Join, Cross Join and self-Join, Sub-queries, Multiple sub queries, nesting of sub queries, sub queries in DML commands, Correlated queries, Indexes, Sequences. Views-Create View, Drop, View and its Advantages

Unit - IV

INTRODUCTION TO PL/SQL: (12)

Introduction to PL/SQL, Block Structure, Data types in PL-SQL, Control Structures-Branching statements, Iterative Control statements, Cursors –Concept, Types- Implicit, Explicit, Procedure to create explicit cursors, Cursor Attributes, TRIGGERS: Concept and types.

References Books:

- 1) SQL, PL/SQL: The Programming Language- Ivan Bayross - (BPB)
- 2) Structured Query Language- by Osborne
- 3) SQL by Scott Ullman.
- 4) SQL & PL/SQL Black Book for Oracle by Dr, P. S. Deshpande.

Paper No- 21-575 Visual Programming

Unit-I

Introduction (12)

overview, Architecture, Features of .NET, Meta data, CLR, Managed and unmanaged code, CTS, CLS, .NET base classes, Introduction to Visual Studio .NETIDE, Types of JIT compiler

Unit - II

Introduction To C# (12)

Introduction to C#, Entry point method, command line arguments, Compiling and building projects, Compiling a C# program using command line utility, CSC.EXE, Different valid forms of main, Global stack and heap memory, reference type and data type, casting implicit and explicit, Boxing and unboxing, pass by value and pass by reference and out parameters, Partial class, DLL, Difference between DLL and EXE

Unit - III

Introduction to Web Programming (12)

Understanding role of WEB server and WEB browser, HTTP request and response structure, Introduction to ASP, Types of path, FORM tag, Types of server controls, Validation controls-Base validator, compare validator, range validator, grouping control validator, Web forms lifecycle, Event handling in WEB forms, response.redirect, server.response, cross page post back property of button, ASP.NET state management, WEB.config, globalization and localization, App Domain

Unit - IV

ADO .NET (12)

Introduction to ADO.Net, ADO.NET Architecture- Connection, command, data reader, data adapter, dataset, Understanding connected layer of ADO.NET and disconnected layer of ADO.NET

Reference Books-

1. Inside C# - By Tom Archer, Andrew Whitechapel (Microsoft Pub)
2. ASP.NET Black Book- By Steven Holzner
3. Professional ASP.NET 2 –Wrox Series- Wallace B. McClure

Paper No.21- 576: Lab course based on 21- 574 RDBMS with Oracle and 21-575 Visual Programming

List of Exercise based on 21- 574 RDBMS with Oracle

1. SQL queries on DDL statements.
2. SQL queries on DML statements.
3. SQL queries on Operators-relational, Logical, Like, Between, IN operators
4. SQL queries on Oracle Functions and clauses
5. SQL queries on Join
6. Creating Views and index
7. PL-SQL block on branching statement.
8. PL-SQL block on looping statement.
9. PL-SQL blocks to create explicit cursor.
10. PL-SQL blocks to study attributes of explicit cursor.
11. PL-SQL blocks to create trigger.

Lab Course based on 21-575 Visual Programming

1. Program on command line argument.
2. Program to demonstrate use of control structures.
3. Program on type casting.
4. Program to manipulate elements of an array.
5. Program on parameter passing.
6. Program using static members.
7. Program to implement concept of inheritance.
8. Program to demonstrate use of interface.
9. Program to demonstrate use of Abstract class.
- 10 .Program on Method overloading and method overriding.
11. Programs on window application.
12. Programs on Database connectivity.

Paper No 21-577: Mini Project

The group of students may undertake a software project in consultation with the internal guide. The group size should not exceed four students. The student is expected do project in any language studied in Vth or earlier Semesters. The mini Project will be evaluated by the external examiners appointed by University. Project documentation format is as per paper no 21-677.

B.C.A. Part – III Semester -VI

Paper No.21-671 Strategic Management

Objectives:

- 1) To acquaint the students with the basic concepts of strategic management and its growing importance in modern era.
- 2) To familiarize the students with the process of strategic management.

Unit - I

Introduction to Strategic Management

(15)

a) Strategic Management: Meaning and definitions of strategy and strategic Management- Need for Strategic Management- Steps involved in Strategic Management Process- Role of Board of Directors, Chief Executive Officer and Senior Management in Strategic Management

b) Strategic management in different context: Strategic management in small business, multinational corporations, manufacturing and service organizations (especially software companies) public sector, voluntary and not-for-profit organizations and professional organization), Strategic Management in India

Unit - II

Levels of Strategies

(15)

a) Corporate-level Strategies: Grand, Stability, Expansion, Retrenchment, Combination Strategies and Corporate Restructuring

b) Business- Level Strategies: Cost Leadership, Differentiation and Focus Business Strategy,

c) Tactics of Business Strategies

Unit - III

Strategy Formulation

(15)

Developing a vision and mission statement- Characteristics of a good vision and mission statement, Defining organizational goals and objectives- Characteristics of objectives, Analysis of internal and external environment: SWOT Analysis and TOWS Matrix, Generating strategic options and choosing a strategy, Challenges faced during strategy formulation

Unit – IV

Strategy Implementation, Evaluation and Control

(15)

Concept of strategy implementation- Inter-relationship of strategy formulation, and implementation, Process of strategy implementation: resource allocation- structures for strategies (Mechanistic, organic tall, flat-SBU, matrix, network, structures), strategic leadership. Functional strategies (marketing, financial, operational and personnel), Concept of strategic evaluation and control- importance of strategic evaluation problems in strategic evaluation), Process of strategic control- types and techniques of strategic control

Reference Books:

- 1) Strategic Management and Business Policy--- Azhar Kazmi, Tata McGraw Hill, 3rd Ed.2009.
- 2) Strategic Management, Concepts and Cases--- Fred R. David, Pearson Education, 9th Ed.2005.

- 3) Competitive Advantage--- Michael E. Porter, Free Press.
- 4) Globalization, Liberalization and Strategic Management---V.P. Michael. Himalaya Publishing House
- 5) Crafting and Executing Strategy- The quest for competitive advantage, Concept and Cases--- A.A.Thompson, A.J.Strickland, JohnE. Gamble, Arum K.Jain , Tata McGrawHill-2010
- 6) Business Policy and Strategic Management---P. Subba Rao, Himalaya PublishingHouse
- 7) Strategic Management---Alpana Trehan, Kogent, Learning SolutionsInc.
- 8) Strategic Management--- Nitish Sengupta, K.J.S. Chandan , Vikas Publishing House Pvt. Ltd. New Delhi.
- 9) Strategic Management--- Pendra Kachru, Excel Books, New Delhi.
- 10) Strategic Management---Saroj Datta, Jaico Publishing House, New Delhi.
- 11) Strategic Management----- N. Chandrsekaran and P. S. Ananthanarayanan, Oxford University Press, New Delhi
- 12) Business Policy and Strategic Management----- Sukul Lomash and P. K. Mishra,(Vikas Publishing House Pvt. Ltd. New Delhi)

Paper No. 21-672 Data Mining and Data Warehousing

Unit - I

Introduction to Data Mining

(12)

Basic Data mining Task, DM versus Knowledge Discovery in Databases, Data Mining Issues, Data Mining Metrics, Social implementation of Data Mining, Overview of Application of Datamining, Architecture of DW, OLAP and Data Cubes, Dimensional Data Modeling - star , snowflake schemas, Data processing - Need Data cleaning. Data integration and Transformation, Data reduction, machine learning, pattern matching

Unit - II

Data Mining techniques

(14)

Frequent item - set and association rule mining: apriori algorithm, use of sampling for frequent item- set tree algorithm, graph sampling: frequent sub graph mining . tree mining ,sequence mining
 Classification and prediction: Decision tree [3hrs], Construction, performance, attribute selection
 Issues : Over fitting tree pruning methods, missing values, continuous classes, Classification and regression tree(CART), Bayesians Classification [6hrs], Bayesians theorem, Narvee Bayes classifier, Bayesian networks, Inference, Parameter and structural earning, Leaner classification [4hrs], Least squares, logistics , perception and SVM classifiers, Prediction [3hrs], Linear regression, Non-linear regression

Unit – III

Clustering

(12)

K-means, expectation maximization (EM)algorithm, Hierarchical clustering, Carrolton clustering

Unit - IV

Software for Data mining and application of Datamining

(10)

R, Weka, Sample applications of datamining

Reference Book

1. Data Mining : Concept and Techniques Han Elsevier ISBN :978938031913
2. Margaret H. Dunham , S. Shridhar Data Mining- Introductory and advanced topics Pearson education
3. Tom Mitchell- machine learning McGraw hill 1997

Paper No - 21-673: Linux Operating System

Unit - I

Introduction

(12)

Operating system, Types of operating system, Functions of operating system, History and development of Linux, Features of Linux, Login , logout procedure, Concept of shell, kernel, Kernel-shell relationship

Unit - II

Handling files and directory's

(12)

Concept of file, types, file system tree, Different GPU (clear , cal, date, wc, who), file handling- ls ,cat ,cp, mv , rm commands , listing file names, using meta characters (* , ? ,[]), Concept of directory , home directory , directory handling commands- cd , mkdir, rmdir, pwd, Basic file attributes, change file/directory, chmod command, Filters-cut, paste, sort, unique, head, tail, grep commands, Command linking using pipe (|) operator, command substitution

Unit - III

VI editor

(12)

Vi Editor, use of VI , features of VI, Different modes and working with VI editor, Command mode -cursor movements(k,j,h,l), delete(character, line, word),Screen up , down, use of repeat factor , joining lines (J), searching for pattern (/ and ?), Input mode- switching with (I,o,r,s,a,I,O,R,S,A), ex mode – saving (w, x,q)

Unit -IV

Simple Shell programming

(12)

Concept of Shell Script, running a shellscript, Statements – read , echo , test , if, case ,exit, Loops-while, until, for Command linear arguments, Exit status of a command

Reference books-

1. Unix concept and applications ----- Sumitabha Das
2. Unix shell programming- Yashwant Kanetkar
3. Linux programming- Foreword By- Alan Cox
4. Red Hat Linux 718 By Bill Ball , David Pitts

Paper No-21-674: Java Programming

Unit - I

Introduction To Java

(12)

History and features of Java Programming, Difference between Java & C++, Java Environment, Java tokens, constants, variables, data types, typecasting, Operators and Expressions, Implementing Java Program, Branching and looping statements, Class, objects, methods, Constructors and destructor

Unit -II

Inheritance and Packages

(12)

Defining sub class, sub class constructor, Inheritance-Multiple and hierarchical, Defining packages, system packages, Creating & accessing packages, Adding a class to package, Polymorphism-function overloading and over ridding, its difference

Unit -III

Multithreading and Exception Handling

(12)

Creating threads, extending a thread class- declaring the class, run() method, Stopping and locking threads, Life cycle of thread, Using thread method, Thread priority, Introduction to exception, Syntax of exception handling code, Multiple catch statement, Using finally statement, Throwing exception

Unit -IV

Applets Programming & Introduction to AWT

(12)

Introduction to applets, Building applet code, Applet lifecycle, Adding applet code to HTML file, Introduction to Abstract Window Toolkit(AWT)

Reference Books:

1. Programming with JAVA, A Primer, 2nd Editions, E Balagurusamy
2. Java Programming- Rajendra Salokhe (ArutaPub)
3. Core Java an integrated approach – Dr R. Nageshwara

Paper-No-21-675 : Lab Course based on Paper no. 21-673 Unix Operating System

List of Exercise

1. Login , logout procedure (user/ login name and password)
2. Copy, move, delete files form different directories.
3. Change file access permissions using chmod and confirm using ls -l command
4. Use of filter commands
5. Creating text files using VI editor.
6. Shell script to get any number and display its square , cube sum of its digits
7. Use of command line arguments in a script.
8. Scripting to demonstrate control structures.
10. Scripts with command substitution to count number of files, number of users working on Linux network.

Paper No 21-676: Lab Course based on Paper no. 674 – Java Programming

List of exercise

1. Java programs based on command linear arguments
2. Java programs based Type Casting
3. Java programs based on branching and looping statements
4. Java programs based on constructors
5. Java programs based on method overloading
6. Java programs based on interfaces
7. Java programs based on inheritance
8. Java programs based on packages
9. Java programs based on multithreading
10. Java programs based on exception handling
11. Java programs with applets

Paper No 21-677: Major Project

A group of maximum four students prepare a major project under the guidance of internal teacher. Project report will be evaluated by the internal teacher out of 20 marks and there will be viva-voce examination for 80 marks.(Documentation – 20Marks, Online Presentation-- 30 Marks, Viva-Voce -- 30 Marks.) The panel for viva-voice Examination will be appointed by university. The student should prepare the project report on the work carried out as a project in semester VI.

Guidelines for Project:

Number of Copies: The student should submit two Hard-bound copies of the Project Report. Acceptance/Rejection of Project Report: The student must submit an outline of the project report to the college for approval. The college holds the right to accept the project or suggest modifications for resubmission. Only on acceptance of draft project report, the student should make the final copies.

Format of the Project Report:

The student must adhere strictly to the following format for the submission of the Project Report.

a. Paper:

The Report shall be typed on white paper, A4 size, for the final submission. The Report to be submitted to the must be original and subsequent copies may be photocopied on any paper.

b. Typing:

The typing shall be of standard letter size, 1.5 spaced and on one side of the paper only. (Normal text should have Arial Font size 11 or 12. Headings can have bigger size)

c. Margins:

The typing must be done in the following margins:

Left -----1.5inch,Right----- 1inch

Top ----- 1inch,Bottom ----- 1inch

d. Front Cover:

The front cover should contain the following details:

TOP : The title in block capitals of 6mm to 15mm letters. CENTRE: Full name in block capitals of 6mm to 10mm letters.

BOTTOM: Name of the University, Course, Year of submission -all in block capitals of 6mm to 10mm letters on separate lines with proper spacing and centering.

f. Blank Sheets:

At the beginning and end of the report, two white blank bound papers should be provided, one for the purpose of binding and other to be left blank.

Documentation Format

Cover Page

- a) Institute/College Recommendation
- b) Guide Certificate
- c) Declaration
- d) Acknowledgement
- e) Index
- f) Chapter Scheme
 - 1) Introduction to Project
 - Introduction
 - Existing System
 - Need and scope of Computer System
 - Organization Profile
 - 2) Proposed System
 - Objectives
 - Requirement Engg.
 - Requirement Gathering
 - SRS
 - 3) System Analysis System Diagram
 - DFD
 - ERD
 - UML(if applicable)
 - 4) System Design
 - Database Design
 - Input Design
 - Output Design
 - 5) Implementation
 - System Requirement
 - Hardware
 - Software
 - Installation process
 - User Guideline
 - 6) Output(with valid Data) (Minimum 6reports)
 - 7) Conclusion and Suggestions

- Conclusion
- Limitations
- Suggestion

8) References:-

- i) Books
- ii) Journals
- iii) Periodicals and Newspapers
- iv) Web
- v) Questioner/Schedule (if used)
- vi) Source code (Include Main Logic source code)

**Chairman
Board of Studies**

**Principal
S. G. M. College, Karad**