

SEMESTER -II

Course Code	Course Name
0227001	Mathematics-I
0227002	Advance C-Programming
0227003	Computer Architecture & Assembly language
0227004	Principle of Management
0227005	Financial Accounting with Tally
0227080	C Prog. & Tally Lab

Course Name: Mathematics-I

Course Code: 0227001 Internal/External Marks: 25/75 Credit: 4

UNIT-I (SETS)

Sets, Subsets, Equal Sets Universal Sets, Finite and Infinite Sets, Operation on Sets, Union, Intersection and Compliments of Sets, Cartesian Product, Cardinality of Set, Simple Applications.

UNIT-II (RELATIONS AND FUNCTIONS)

Properties of Relations, Equivalence Relation, Partial Order Relation Function: Domain and Range, Onto, Into and One to One Functions, Composite and Inverse Functions, Introduction of Trigonometric, Logarithmic and Exponential Functions.

UNIT-III (PARTIAL ORDER RELATIONS AND LATTICES)

Partial Order Sets, Representation of POSETS using Hasse diagram, Chains, Maximal and Minimal Point, glb, lub, Lattices & Algebraic Systems, Principle of Duality.

UNIT-IV. (DETERMINANTS)

Definition, Minors, Cofactors, Properties of Determinants MATRICES: Definition, Types of Matrices, Addition, Subtraction, Scalar Multiplication and Multiplication of Matrices, Adjoint, Inverse, Cramers Rule, Rank of Matrix Dependence of Vectors, Eigen Vectors of a Matrix, Caley-Hamilton Theorem (without proof).

UNIT-V. (LIMITS & CONTINUITY)

Limit at a Point, Properties of Limit, Computation of Limits of Various Types of Functions, Continuity at a Point, Continuity Over an Interval, Intermediate Value Theorem, Type of Discontinuities

UNIT-VI. (DIFFERENTIATION & INTEGRATION)

Derivative, Derivatives of Sum, Differences, Product & Quotients, Chain Rule, Derivatives of Composite Functions, Logarithmic Differentiation
Integral as Limit of Sum, Fundamental Theorem of Calculus (without proof.), Indefinite Integrals, Methods of Integration Substitution, By Parts.

Referential Books:

- S. Grewal, “Elementary Engineering Mathematics”, 34th Ed., 1998.
- Shanti Narayan, “Integral Calculus”, S. Chand & Company, 1999
- Kolman, Busby and Ross, “Discrete Mathematical Structure”, PHI, 1996.
- S.K.Sarkar, “Discrete Maths”; S. Chand & Co., 2000

Course Name: Advance C-Programming

Course Code: 0227002

Internal/External Marks: 25/75

Credit: 4

UNIT-I

Arrays : Definition, declaration and initialization of one dimensional array; Accessing array elements; Displaying array elements; Sorting arrays; Arrays and function; Two-Dimensional array: Declaration and Initialization, Accessing and Displaying, Memory representation of array [Row Major, Column Major]; Multidimensional array

UNIT-II

Pointers: Definition and declaration, Initialization; Indirection operator, address of operator; pointer arithmetic; dynamic memory allocation; arrays and pointers; function and pointers

UNIT-III

Strings: Definition, declaration and initialization of strings; standard library function: strlen(), strcpy(), strcat(), strcmp(); Implementation without using standard library functions

UNIT-IV

Structures : Definition and declaration ; Variables initialization; Accessing fields and structure operations; Nested structures; Union: Definition and declaration; Differentiate between Union and structure

UNIT-V

Introduction C Preprocessor: Definition of Pre-processor; Macro substitution directives; File inclusion directives; Conditional compilation

Bitwise Operators

Bitwise operators; Shift operators; Masks; Bit field

UNIT-VI

File handling: Definition of Files, Opening modes of files; Standard function: fopen(), fclose(), feof(), fseek(), rewind(); Using text files: fgetc(), fputc(), fscanf() Command line arguments.

Referential Books:

- Let us C-Yashwant Kanetkar
- Programming in C-Balguruswamy
- The C programming Lang., Pearson Ecl - Dennis Ritchie

Course Name: Computer Architecture & Assembly Language

Course Code: 0227003 Internal/External Marks: 25/75 Credit: 4

UNIT-I

Basic computer organization and design, Instructions and instruction codes, Timing and control/ instruction cycle, Register/ Types of register/ general purpose & special purpose registers/ index registers, Register transfer and micro operations/ register transfer instructions, Memory and memory function, Bus/ Data transfer instructions, Arithmetic logic micro-operations/ shift micro- operations, Input/ Output and interrupts, Memory reference instructions, Memory interfacing memory/ Cache memory.

UNIT-II

Central Processing Unit: General Register Organization/ stacks organizations instruction formats, addressing modes, Data transfer and manipulation. Program control reduced computer, pipeline/ RISC/ CISC pipeline vector processing/ array processing.; Arithmetic Algorithms: Integer multiplication using shift and add, Booth's algorithm, Integer division, Floating-point representations.

UNIT-III

Computer Arithmetic: Addition, subtraction and multiplication algorithms, divisor algorithms. Floating point, arithmetic operations, decimal arithmetic operations, decimal arithmetic operations.

UNIT-IV

Input – Output Organization: Peripheral devices, Input/output interface, ALU Asynchronous Data transfer, mode of transfer, priority interrupts, Direct memory Address (DMA), Input/ Output processor (IOP), serial communication.

UNIT-V

Evaluation of Microprocessor: Overview of Intel 8085 to Intel Pentium processors Basic microprocessors, architecture and interface, internal architecture, external architecture memory and input/ output interface.

UNIT-VI

Assembly language, Assembler, Assembly level instructions, macro, use of macros in I/C instructions, program loops, programming arithmetic and logic subroutines, Input-Output programming.

Referential Books:

- Leventhal, L.A, "Introduction to Microprocessors", Prentice Hall of India . Mathur, A.P.,
- "Introduction to Microprocessors" , Tata McGraw Hill
- Rao,P.V.S., "Prospective in Computer Architechture" , Prentice Hall of India

Course Name: Principle of Management

Course Code: 0227004 Internal/External Marks: 25/75 Credit: 4

UNIT-I Nature of Management:

Meaning, Definition, it's nature purpose, importance & Functions, Management as Art, Science & Profession- Management as social System Concepts of management- Administration- Organization, Management Skills, Levels of Management.

UNIT-II Evolution of Management Thought:

Contribution of F.W.Taylor, Henri Fayol, Elton Mayo, Chester Barhard & Peter Drucker to the management thought. Business Ethics & Social Responsibility: Concept, Shift to Ethics, Tools of Ethics.

UNIT-III Functions of Management: Part-I

Planning – Meaning- Need & Importance, types, Process of Planning, Barriers to Effective Planning, levels – advantages & limitations. Forecasting- Need & Techniques

Decision making-Types - Process of rational decision-making & techniques of decision-making

Organizing – Elements of organizing & processes: Types of organizations, Delegation of authority – Need, difficulties Delegation – Decentralization

Staffing – Meaning & Importance, Direction – Nature – Principles, Communication – Types & Importance

UNIT-IV Functions of Management: Part-II

Motivation – Importance – theories

Leadership – Meaning –styles, qualities & function of leader Controlling - Need, Nature, importance, Process & Techniques, Total Quality Management Coordination – Need – Importance

UNIT – V

Management of Change: Models for Change, Force for Change, Need for Change, Alternative Change Techniques, New Trends in Organization Change, Stress Management.

UNIT-VI Strategic Management

Definition, Classes of Decisions, Levels of Decision, Strategy, Role of different Strategist, Relevance of Strategic Management and its Benefits, Strategic Management in India

Referential Books:

- Essential of Management - Horold Koontz and Itenz Weibrich- McGrawhills International
- Management Theory & Practice - J.N.Chandan
- Essential of Business Administration - K.Aswathapa, Himalaya Publishing House
- Principles & practice of management - Dr. L.M.Parasad, Sultan Chand & Sons - New Delhi

Course Name: Financial Accounting with Tally

Course Code: 0227005 Internal/External Marks: 25/75 Credit: 4

UNIT-I

Basic Concepts of Accounting, Financial Statements, Financial Statement Analysis, Cost Centre, Basic concepts of Inventory Tally Configuration & INI setup, Data Directory & Folders configuration, Single & Multiple User, Tally Screen Components, Mouse / Keyboard Conventions & Key, Combinations, Switching between screen areas, Quitting Tally. Maintaining Company Data, Basic Company Details, Create/Alter/Select/Load/Close a Company, Chart of Accounts, Company Features, Configuration.

UNIT-II

Create, Alter & Display Groups and Ledgers, All accounting voucher types and transactions, Create and Alter new Voucher type, Item and Account Invoice transactions, Excise Invoice, Export Invoice, Transactions using Bill-wise details Create, Alter & Display Cost Centre and Cost Categories, Cost centre & Cost Category allocation in voucher entry, Creating Cost centre Class, Invoice entry in a Class situation, Create, Alter & Delete Foreign Currencies, Voucher entry using foreign currency, Bank Reconciliation, Interest calculations using simple & advance parameters, Interest calculations on outstanding balances & on invoices, Use of voucher class, adjustment of interest, Creation of voucher class, Invoice entry in a class situation.

UNIT-III

Create, Alter & Delete Budgets for groups, ledgers & cost centres, Defining credit limit & credit period, Display Budgets & variances, Create, Alter & Delete a scenario. Enabling Job Costing in Tally, Master creation & configuration for Job costing, Creation of Voucher type & Voucher class for Stock Transactions, Creation of Transfer journal for transfer of stock between Godowns, Consumption journal Transactions, payment voucher, Godown summary Report, Job Work Analysis, Material consumption summary. Reports like balance sheet, Profit & Loss account, Ratio analysis, Trial Balance. Accounts books like cash/bank book, All ledgers, Group summary & vouchers, Sales, purchase & journal registers, Cost centre & category summary, Cost centre breakup, ledger & group breakup, outstanding receivables & payables, interest receivable & payable, Statistics, Cash & Fund flow, Day book, List of Accounts, Reversing journals, optional vouchers, post-dated vouchers.

UNIT-IV

Create, Alter & Display Stock Groups and Stock Items, Stock item behaviour using costing and market valuation method, other behaviour like treating all sales as new manufacture, treating all purchases as consumed, treating all rejections inward as scrap, ignoring negative balances, Treating difference due to physical counting, Create, Alter & Display Stock categories, Create, Alter, Display simple & compound units of measures, Stock items using alternate units, Defining standard cost & selling price, Defining Rate of duty, Defining MRP, Create, Alter & Display Godowns, Allocation of items to the Godowns, All inventory voucher types and transactions, Inventory details in accounting vouchers, Defining re-order level, Transactions using tracking

numbers, Use of batch-wise details in voucher, Additional cost details in vouchers, Creating Bill of material, Cost estimation, Creating Price list & defining Price levels, invoice using Price list, Zero valued entries, Transactions in case of Different actual & billed quantities. Reports like Stock

summary, Inventory books like Stock item, Group summary, Stock transfers, Physical stock register, Movement analysis, Stock group & item analysis, stock category analysis, Ageing analysis, Sales order & Purchase order book, Statement of inventory related to Godowns, categories, stock query, Reorder status, Purchase & Sales order summary, Purchase & Sales bill pending, Exception reports like negative stock & ledger, overdue receivables & payables, memorandum vouchers, optional vouchers, post-dated vouchers, reversing journals.

UNIT-V

Cheque Printing, Common printing options, Different printing formats, Multi-Account printing, Dynamic- Report specific options. Creating Group Company, Use of Tally vault, Using Security control & defining different security levels, Use of Tally Audit. Back-up & Restore, Splitting company data, Export & import of Data, ODBC compliance, use of E-mail, Internet publishing, Upload, web browser & online help, Re-write data.

Referential Books:

- Implementing Tally 7.2 by Nadhani; BPB Publications, ISBN: 817656494X
- BPB Tally 7.2 by BPB Editorial Board (Hindi) BPB Publications, ISBN 81-7656-594-6