

IV Semester Skill Enhancement Courses

Mathematics Stream:

Theory of Equations / Electrical Circuits & Network Skills

Bio-Sciences Stream:

Apiculture / Food Adulteration

Arts Stream:

Legal Literacy / Office Management

Commerce Stream:

Practice of Life Insurance / Banking Technology

Theory of Equations

2 Credits

Unit I

Graphic representation of a polynomial-Maxima and minima values of polynomials-Theorems relating to the real roots of equations-Existence of a root in the general equation –Imaginary roots-Theorem determining the number of roots of an equation-Equal roots-Imaginary roots enter equations in pairs-Descartes' rule of signs for positive roots- Descartes' rule of signs for negative roots-

Unit II

Relations between the roots and coefficients-Theorem-Applications of the theorem-Depression of an equation when a relation exists between two of its roots-The cube roots of unity- Symmetric functions of the roots-examples.

Text:

1. W.S. Burnside and A.W. Panton, *The Theory of Equations*

References:

1. C. C. Mac Duffee, *Theory of Equations*
2. Hall and Knight, *Higher Algebra*

ELECTRICAL CIRCUITS AND NETWORK SKILLS

2 Credits

UNIT-I

Basic Electricity Principles: Voltage, Current, Resistance, and Power. Ohm's law. Series, parallel, and series-parallel combinations. AC Electricity and DC Electricity. Familiarization with multimeter, voltmeter and ammeter.

Electrical Circuits: Basic electric circuit elements and their combination. Rules to analyze DC sourced electrical circuits. Current and voltage drop across the DC circuit elements. Single-phase and three-phase alternating current sources. Rules to analyze AC sourced electrical circuits. Real, imaginary and complex power components of AC source. Power factor. Saving energy and money.

Electrical Drawing and Symbols: Drawing symbols. Blueprints. Reading Schematics. Ladder diagrams. Electrical Schematics. Power circuits. Control circuits. Reading of circuit schematics. Tracking the connections of elements and identify current flow and voltage drop.

UNIT-II

Generators and Transformers: DC Power sources. AC/DC generators. Inductance, capacitance, and impedance. Operation of transformers.

Components with DC or AC sources: Resistors, inductors and capacitors. Diode and rectifiers. Components in Series or in shunt. Response of inductors and capacitors with DC or AC sources

Electrical Protection: Relays. Fuses and disconnect switches. Circuit breakers. Overload devices. Ground-fault protection. Grounding and isolating. Phase reversal. Surge protection. Relay protection device

Reference Books:

1. A text book in Electrical Technology - B L Theraja - S Chand & Co.
2. A text book of Electrical Technology - A K Theraja
3. Performance and design of AC machines - M G Say ELBS Edn.
4. Electrical Circuits, K.A. Smith and R.E. Alley, 2014, Cambridge University Press

Apiculture

2 Credits

Unit- I Biology of Bees & Rearing of bees

- 1.1 History ,classificatios and Biology of honey bees
- 1.2 Social organisation of Bee colony
- 1.3 Artificial Bee rearing (Apiary), Bee keeping equipments
- 1.4 Methods of extraction of honey (indigenous & modern)

Unit-II Bee economy & Diseases and enemies of bees :

- 2.1 Products of Apiculture industry and its uses, pollen etc.
- 2.2 Bee keeping industry recent efforts , modern methods.
- 2.3 Bee diseases and enemies.
- 2.4 Control and preventive measures.

Suggested Readings:

1. Prost,P.J.Apiculture. Oxford and IBH, New Delhi.
2. Bisht D.S., Apiculture, ICAR Publication.
3. Singh S., Beekeeping in India, Indian Council of Agricultural Research, New Delhi.

Food Adulteration

2 Credits

Unit-I

Definition and introduction to food adulteration

Types of food adulteration

Common food adulterants

Causes of food adulteration

Analysis of food

Unit-II

Effects of food adulteration

Prevention of food adulteration

Detection of common food adulterants

Food Adulteration Act-1954

Suggested Readings:

1. Jesse Park Battershall. Food adulteration and its detection. Published by book on demand, Miami, 2015
2. R.B.Sethi's Prevention of food adulteration Act.
3. Dr. Sheela.S. prevention of Food adulteration.

Legal Literacy

2 Credits

Unit - I

1. Introduction: Judiciary – Significance and functions.
2. Sources of Law , Concept of Rule of Law and Judicial Review.
3. Judicial System in India – Supreme Court, High Court and District Courts.
4. Constitutional Protections of Rights: Writs- Habeas Corpus, Mandamus, Certiorari, Prohibition and Quo-warranto.
5. Arbitration, Tribunal Adjudication and Alternate Dispute Resolution – Administrative Tribunals, Ombudsman, Mediation, Conciliation, Lok Adalats, Lokpal and Lokayukta.
6. Right to information Act – 2005

Unit – II

1. Legal Terminology: Appeals, Alimony, Backlog, Bail, Bench, Contempt of Court, Immunity, Indian Penal Code, Civil Procedure Code, Criminal Procedure Code, Juvenile Court, Power of Attorney, Petition, Plaint, Suit, Status Quo, Summons.
2. First Information Report (FIR) – Procedure and Importance.
3. Public Interest Litigation (PIL)
4. Rights of Senior Citizens, Disabled, Tribal's and Depressed Classes.

References:

1. Jeroma Hall, Principles of Criminal Law
2. Ratan Lal & Dhiraj Law, Indian Penal Code
3. R.W.M. Dias-Jurisprudence (1994) Indian Reprint-Adithya Books, Delhi
4. D.D.Basu, Shorter Constitution of India, 2001 Wadhwa, Nagpur
5. V.R.Krishna Iyer, The Dialectics and Dynamics of Human Right in India
6. S.K.Kapoor, Human Right under Int.Law & Indian Law
7. Dr. Hemath Kumar, Lok Adalat In India - Genesis Law Practice And Prospects
8. Dr. Mamta Rao, Public Interest Litigation (PIL) - Legal Aid and Lok Adalats

Office Management

2 Credits

Unit I: Introduction

1. Office Management: Nature, Scope and Importance
2. Basic Principles of Office Organization
3. Office Accommodation
4. Office Automation and paperless Office

Unit II: Office Organization and Management

1. Office Planning and Lay-out Office Environment
2. Forms: Management and Control
3. Office Filing System and Classification
4. Office Communication, Correspondence

Paper : (SEC-2) : PRACTICE OF LIFE INSURANCE

Paper: SEC-2
PPW: 2 Hrs
Credits : 2

Max. Marks: 50 (40+10)
Exam Duration: Hrs

Objectives:a) To make the student understand Life Insurance Market in India. b) To discuss the issues related to risk management in view of life insurance.

UNIT-I: INTRODUCTION TO LIFE INSURANCE AND TYPES OF LIFE INSURANCE POLICIES AND PREMIUM CALCULATION : Meaning evolution, growth and principles of Life Insurance —Life Insurance Organizations in India— Competition and Regulation of Life Insurance. Types of Life Insurance Policies – Term, Whole Life, Endowment, Unit Linked and with or without Profit Policies –Customer Evaluation – Policy Evaluation — Group and Pension Insurance Policies – Special features of Group Insurance /Super Annuation Schemes – Group Gratuity Schemes. Computation of Premiums—Meaning of Premium, its calculation--Rebates – Mode of Rebates – Large sum assured Rebates – Premium Loading – Rider Premiums – Computation of Benefits – Surrender value – Paid up value

UNIT-II: SETTLEMENT OF CLAIMS RISK & UNDERWRITINGS AND FINANCIAL PLANNING & TAX SAVING: Settlement of claims: Intimation Procedure, documents and settlement procedures. Underwriting: The need for underwriting – Guiding principles of Underwriting – Factors affecting Insurability – Methods of Life Classification – Laws affecting Underwriting. Financial Planning and taxation: Savings – Insurance vis-à-vis- Investment in the Units Mutual Funds, Capital Markets – Life Insurance in Individual Financial Planning – Implications in IT treatment.

SUGGESTED READINGS:

1. Insurance Institute of India, Practice of Life Insurance, Mumbai.
2. P.K.Gupta, Insurance and Risk Management, Himalaya Publishing House, Mumbai.
3. Kanika Mishra, Fundamentals of Life Insurance: Theories and Applications, Prentice Hall
4. Kutty, S.K., Managing Life Insurance, Prentice Hall of India: New Delhi
5. Black, Jr. Kenneth and Harold Skipper Jr., Life and Health Insurance, Prentice Hall, Inc., England.
6. K.C. Mishra and C.S. Kumar, Life Insurance: Principles and Practice, Cengage Learning: New Delhi.
7. Sathak, Life Insurance in India, Respose Books: New Delhi