

ACCORDING TO THE NEW SYLLABUS OF HEC
PUNJAB UNIVERSITY 2026-2029



LL.B 4 YEARS PROGRAM
(SEMESTER SYSTEM)

Quantitative Reasoning-II

Questions & Answers Series

Semester-II

Paper Code: 201

Plus: Fully Solved Up-To-Date Papers



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Dedication

To my parents, with deepest gratitude, whose love and prayers have always been my source of strength.

Shahid Mahmood Dogar

PREFACE

It is a matter of great pleasure and professional satisfaction for me to present this book, “**Quantitative Reasoning-II**”, for the students of **LL.B Semester-II**. The study of quantitative reasoning has become an essential component of modern legal education because lawyers, judges, policymakers, and legal researchers increasingly rely on logical thinking, analytical reasoning, mathematical interpretation, and statistical evidence in the administration of justice and decision-making processes. This book has been written with the objective of providing law students with a clear, practical, and comprehensive understanding of quantitative methods that are relevant to legal studies and professional practice.

The contents of this book have been carefully designed in accordance with the academic needs of LL.B students. The book covers three major areas: **Logic, Logical and Critical Reasoning; Mathematical Modeling and Analyses; and Statistical Modeling and Analyses**. These topics provide students with the intellectual tools required to analyze arguments, evaluate evidence, solve quantitative problems, interpret data, and make reasoned decisions. Special emphasis has been placed on explaining concepts in simple and understandable language while maintaining academic depth and rigor.

In preparing this work, I have consulted a variety of recognized academic sources and standard texts in quantitative reasoning, logic, mathematics, and statistics. Every effort has been made to present the material in a systematic manner with practical illustrations, examples, solved problems, exercises, diagrams, and applications that are relevant to law students. The objective is not merely to teach formulas and techniques but to develop analytical and critical thinking skills that can be applied in legal research, advocacy, policy analysis, and judicial reasoning.

As a teacher, researcher, and practicing lawyer, I firmly believe that quantitative reasoning enhances a law student's ability to think objectively, assess evidence critically, and reach sound conclusions. It bridges the gap between theoretical legal knowledge and practical problem-solving abilities. I hope that this book will assist students in achieving academic excellence and will serve as a useful reference for teachers, researchers, and legal professionals.

I am grateful to my teachers, colleagues, students, and well-wishers whose encouragement and support inspired me to complete this work. I shall consider my efforts successful if this book contributes to the intellectual growth and professional development of law students.

SHAHID NAEEM

Ph.D. Scholar | Gold Medallist

Advocate High Court

LL.M (United Kingdom), DLL (PU),

MCS, M.Sc. (Economics), M.A. (Political Science)

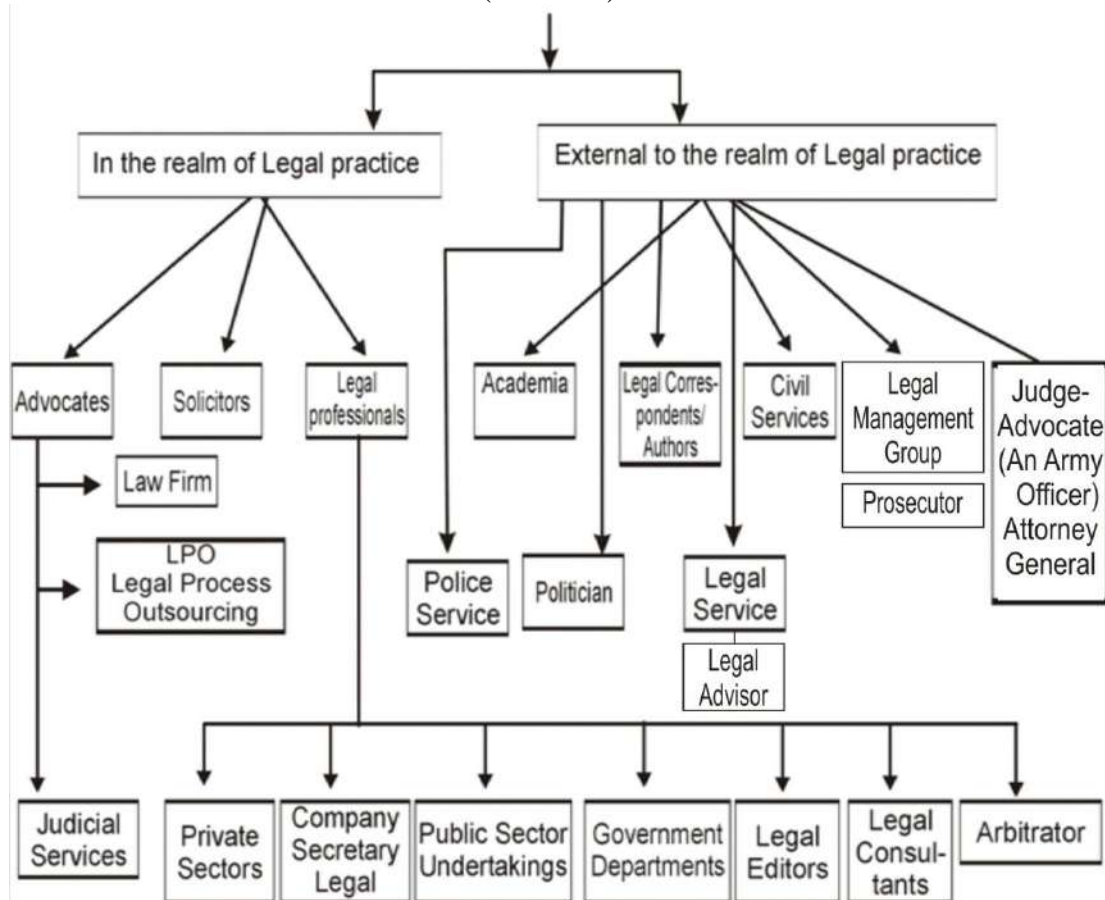
YOUR POSITION AS A LEGAL PROFESSIONAL

An Overview

The LL.B course will make you a law graduate but not a lawyer. Law College teaches some fundamental basics, but in no way it can introduce you to the diversity in the legal profession. A law degree is only presumptive evidence of a person's fitness for the practice of law.

LL.B

(4 Years)¹



¹The Revised Curriculum of the LL.B Four-Year Degree Program was issued by the Higher Education Commission, Government of Pakistan, Islamabad, vide Notification No. 5-4/HEC/NCRC/Law/2025/7695, dated 10.07.2025. Subsequently, the University of the Punjab also issued Notification No. D/5560/Acad, dated 22.08.2025.

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“Remember that your first duty is to the State. You should be ready and willing to serve the State and the people. The profession of law is not a business; it is a noble service.” —

Quaid-e-Azam Muhammad Ali Jinnah

STRUCTURE OF LL.B PROGRAMMES

4 YEARS LL.B PROGRAM

بنی آدم کے لیے دین اور دنیا دونوں لازم و ملزوم ہیں۔ انسان کو اپنی زندگی بہتر انداز میں گزارنے کے لیے کسی نہ کسی ذریعہ معاش کی ضرورت پڑتی ہے، اور اسی مقصد کے تحت وہ کوئی باعزت پیشہ اختیار کرتا ہے تاکہ روزی کما سکے۔ دیگر شعبہ جات کی طرح وکالت بھی معاشرے میں ایک نہایت اہم اور باوقار شعبہ ہے۔ آج کے ترقی یافتہ اور باشعور دور میں اس کی اہمیت اور افادیت مزید بڑھ گئی ہے۔

اسی تناظر میں ہائر ایجوکیشن کمیشن اور پاکستان بار کونسل کے اشتراک سے ایل ایل بی پروگرام کا نیا نصاب متعارف کروایا گیا ہے۔ پہلے یہ پروگرام پانچ سالہ مدت پر مشتمل تھا، تاہم یونیورسٹی نے اب اس کی جگہ چار سالہ ایل ایل بی (LL.B) پروگرام شروع کر دیا ہے۔ پاکستان میں وکیل بننے کے لیے ایل ایل بی کی ڈگری حاصل کرنا اور اسے پاکستان بار کونسل سے تسلیم (Recognize) کروانا ضروری ہے۔ وکیل کو پاکستان میں ایڈووکیٹ (Advocate) کہا جاتا ہے، اور اس کے لیے بار کونسل کی رکنیت بنیادی شرط ہے۔

پاکستان میں ایل ایل بی پروگرام کی مدت وقت کے ساتھ بدلتی رہی ہے۔ 1992ء سے پہلے یہ دو سالہ پروگرام تھا، جسے بعد میں تین سالہ کر دیا گیا۔ اس کے بعد پانچ سالہ ایل ایل بی پروگرام نافذ ہوا، لیکن اب یونیورسٹی نے چار سالہ ایل ایل بی پروگرام متعارف کروایا ہے۔ اس نئے پروگرام میں طلبہ انٹر میڈیٹ (HSC) کے بعد براہ راست داخلہ حاصل کر سکتے ہیں۔ چار سالہ ایل ایل بی میں طلبہ کو گریجویٹیشن سطح کی تعلیم کے ساتھ ساتھ قانون کے بنیادی اور پیشہ ورانہ مضامین بھی پڑھائے جاتے ہیں، تاکہ وہ عملی زندگی میں بطور وکیل یا قانونی ماہر بہتر خدمات انجام دے سکیں۔ اس پروگرام میں داخلہ لینے کے لیے لاء ایڈمیشن ٹیسٹ (LAT) پاس کرنا لازمی ہے۔ کامیاب امیدوار کسی بھی منظور شدہ کالج یا یونیورسٹی میں میرٹ کی بنیاد پر داخلہ حاصل کر سکتے ہیں۔ یہ پروگرام سمسٹر سسٹم کے تحت پڑھایا جاتا ہے اور کل آٹھ (8) سمسٹر زپر مشتمل ہے۔

Pakistan is a common law country, and to become a lawyer in Pakistan, one must obtain a law degree (LL.B.) from a Pakistani university or from a foreign university in a common law country, provided it is recognized by the Pakistan Bar Council. Lawyers in Pakistan are called *advocates*. An advocate must be a member of one of the Provincial Bar Councils, i.e., Punjab Bar Council, Sindh Bar Council, Khyber Pakhtunkhwa Bar Council, Balochistan Bar Council, or the Islamabad Bar Council.

Previously, the LL.B. degree in Pakistan was of two years' duration, later changed to three years, and then to a five-year joint B.A./LL.B. program. However, the Pakistan Bar Council and the Higher Education Commission have now introduced a **revised four-year LL.B. program**, replacing the earlier five-year scheme. Under the new structure, students may seek admission to the LL.B. program after completing intermediate (HSC). The program consists of **eight semesters** and includes both foundational and professional law courses.

Admission to the LL.B. program requires passing the **Law Admission Test (LAT)**, conducted under the supervision of the Higher Education Commission. After successfully completing the degree, a graduate wishing to practice law must register with the respective Provincial Bar Council and undertake a **six-month pupillage (articleship)** under the supervision of a senior advocate with at least ten years of standing. Upon completion, the candidate must pass a **Bar Admission Test**, which consists of multiple-choice/written questions and a viva voce conducted by a panel of Bar Council members.

In addition to local programs, many aspiring lawyers in Pakistan also pursue the **University of London's external LL.B. program**, which has gained popularity among students seeking international exposure and recognition.



ہائیر ایجوکیشن کمیشن

HIGHER EDUCATION COMMISSION

Government of Pakistan, Islamabad

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Director General
Academics & Curriculum Division

No. 5-4/HEC/NCRC/Law/2025/7695
July 10, 2025

SUBJECT: REVISED CURRICULUM OF LLB FOUR YEAR DEGREE PROGRAM

The Higher Education Commission (HEC) of Pakistan, as mandated by its law, provides guidance to Higher Education Institutions (HEIs) on curricula for tertiary education levels in alignment with the National Qualifications Framework (NQF). As part of ongoing efforts to align legal education with international best practices and to enhance its quality and relevance, the HEC has streamlined the LLB program to a 4-year duration after series of consultative meetings with all stakeholders. The revised curriculum and updated standards are aligned with HEC's Undergraduate Education Policy V 1.1 (2023) and Graduate Education Policy (2023), ensuring coherence with national priorities and adherence to international benchmarks after taking onboard the Pakistan Bar Council (PBC), Directorate of Legal Education (DLE) and having endorsed by Constitutional Bench of the Honorable Supreme Court of Pakistan.

2. The revised curriculum of LLB, incorporating option for advanced electives (06) is hereby notified. Universities offering the program are advised to align their curriculum with these updated standards as a minimum requirement. Additionally, the respective departments must develop course content in accordance with the prescribed framework, intended Program Learning Outcomes (PLOs) and Course Learning Outcomes (CLOs) mentioned in the document. The finalized course content should be submitted electronically to this office at the earliest. An electronic copy of the revised curriculum is available on HEC's official website. The revised curriculum is effective from **Fall – 2025**.

DR. AMJAD HUSSAIN

Vice Chancellors/Rectors/Heads

All Public/Private Sector Universities/DAIs

Copy for information to:

- i. ES to Chairman, Higher Education Commission, Islamabad
- ii. ES to Executive Director, Higher Education Commission, Islamabad
- iii. Director, Directorate of Legal Education Supreme Court Building, Islamabad
- iv. Secretary, Pakistan Bar Council, Supreme Court Building, Islamabad
- v. PS to Consultant, Quality Assurance, Higher Education Commission, Islamabad
- vi. PS to Managing Director, NAHE, Higher Education Commission, Islamabad
- vii. PS to Advisor, Human Resource Development Division, Higher Education Commission, Islamabad
- viii. PS to Director General, Academics Division, Higher Education Commission, Islamabad
- ix. PS to Director General, A&A Division, Higher Education Commission, Islamabad
- x. PS to Director General, Higher Education Commission, Regional Centers in Karachi, Lahore, Peshawar & Quetta
- xi. Director, Academics Division, Higher Education Commission, Islamabad
- xii. Director / In-charge, Higher Education Data Repository, Higher Education Commission, Islamabad
- xiii. Director / In-charge, Quality Assurance Agency, Higher Education Commission, Islamabad

NOTIFICATION (22 August, 2025)

UNIVERSITY OF THE PUNJAB

The Vice Chancellor has, in exercise of the powers vested in him under Section 15(3) of the University of the Punjab Act, 1973 and in anticipation of the approval of relevant bodies, been pleased to approve the recommendations of the Board of Studies in Law and Board of Faculty of Law made at their meetings dated 08.08.2025 and 13.08.2025 respectively regarding Syllabi and Courses of Reading of LL.B. 04 years program under Semester System for Affiliated Colleges of the University with effect from Academic Session, 2025-2026 in accordance with the HEC's Undergraduate Education Policy (2023) and the Graduation Education Policy (2023), as endorsed by the Constitutional Bench of the Honorable Supreme Court of Pakistan.

The Syllabi & Courses of Reading for LL.B. program for 1st and 2nd semester is attached. However, the Syllabi & Courses of Reading of LL.B. program for remaining semesters shall be provided in due course of time.

Admin. Block,
Quaid-i-Azam Campus,
Lahore.
No. D/ 5560 /Acad

Sd/-

Dr. Ahmad Islam
Registrar

Dated: 22-08 /2025

Copy of the above is forwarded to the following for information and necessary action: -

1. Hon'ble Pro-Chancellor/Minister of Education
2. Members of the Syndicate
3. Pro-Vice Chancellor/Chairman, Admission Committee
4. Dean, Faculty of Law
5. Principal, Punjab University Law College
6. Principals of all the affiliated Law Colleges
7. Controller of Examinations
8. Director, IT (for uploading on the PU website)
9. Additional Registrar (Affiliation)
10. Deputy Registrar (General)
11. Secretary to the Vice-Chancellor
12. Secretary to the Pro-Vice Chancellor
13. Private Secretary to the Registrar
14. Assistant Registrar (Syndicate)
15. Assistant Registrar (Syllabus)



Dr. Ahmad Islam
Registrar

04-YEARS LL.B PROGRAM 2026-2029

SCHEME OF STUDIES

SEMESTER-II

S.No.	Course	Credit Hours	Category
1	Quantitative Reasoning-I	3 (3-0)	General Education
2	Social Sciences (Introduction to Social Institutions, & Civic Education)	2 (2-0)	General Education
3	Expository Writing	3 (3-0)	General Education
4	Natural Science (Environmental Sciences & Law)	3 (2-1)	General Education
5	Law of Torts	3 (3-0)	Major
6	Criminal Law	3 (3-0)	Major
TOTAL CREDITS : 17			

COURSE OUTLINE — SEMESTER II

UNIVERSITY LAW COLLEGE
UNIVERSITY OF THE PUNJAB
COURSE INFORMATION

Paper Code: LL.B. 201

Credit Hours: 03

Paper Title: Quantitative Reasoning-II

Domain: General Education

COURSE INTRODUCTION:

Quantitative Reasoning (II) is a sequential undergraduate course that focuses on logical reasoning supported with mathematical and statistical concepts and modeling / analysis techniques to equip students with analytical skills and critical thinking abilities necessary to navigate the complexities of the modern world. The course is designed to familiarize students with the quantitative concepts and techniques required to interpret and analyze numerical data and to inculcate an ability in students the logical reasoning to construct and evaluate arguments, identifying fallacies, think systematically. Keeping the pre-requisite course of Quantitative Reasoning (I) as its base, this course will enable students further their quantitative, logical and critical reasoning abilities to complement their specific major / field of study.

LEARNING OUTCOMES:

By the end of this course, students shall have:

1. Understanding of logic and logical reasoning;
2. Understanding of basic quantitative modeling and analyses;
3. Logical reasoning skills and abilities to apply them to solve quantitative problems and evaluate arguments;
4. Ability to critically evaluate quantitative information to make evidence based decisions through appropriate computational tools.

SYLLABUS

1. Logic, Logical and Critical Reasoning

- Introduction and importance of logic;
- Inductive, deductive and adductive approaches of reasoning;
- Propositions, arguments (valid; invalid), logical connectives, truth tables and propositional equivalences;
- Logical fallacies;
- Venn Diagrams;
- Predicates and quantifiers;
- Quantitative reasoning exercises using logical reasoning concepts and techniques.

2. Mathematical Modeling and Analyses;

- Introduction to deterministic models;
- Use of linear functions for modeling in real-world situations;
- Modeling with the system of linear equations and their solutions;
- Elementary introduction to derivatives in mathematical modeling;
- Linear and exponential growth and decay models;
- Quantitative reasoning exercises using mathematical modeling.

3. Statistical Modeling and Analyses

- Introduction to probability models; Basic concept of Normal distribution and Binomial distribution with simple applications
- Bivariate analysis, scatter plots; Pearson correlation; Simple linear regression
- Concept of statistical Inference in decision making; Chi-square test of association
- Quantitative Reasoning exercises using statistical modeling.

SUGGESTED INSTRUCTIONAL / READING MATERIAL

1. "Using and Understanding Mathematics: A Quantitative Reasoning Approach" by Bennett, J.O., Briggs, W. L., &Badalmenti, A.
2. "Discrete Mathematics and its Applications" by Kenneth H. Rosen.
3. "Discrete Mathematics with Applications" by Susanna S. Epp.
4. "Applied Mathematics for Business, Economics and Social Sciences" by Frank S Budnick.
5. "Elementary Statistics: A Step by Step Approach" by Allan Bluman.
6. "Introductory Statistical Modeling" by Prem S. Mann.
7. "Applied Statistical Modeling" by Salvatore Babones.
8. "Barrens SAT" by Sharvon Weiner Green, M.A and Ira K. Wolf.

■ Program Overview & Campuses

- PU offers the **LL.B. 4-Year Program (Semester System)** across several campuses:
 - ✚ University Law College (Quaid-e-Azam Campus, Lahore)
 - ✚ Law Departments at Gujranwala, Jhelum, and Pothowar (Gujjar Khan) campuses University of the Punjab.

Academic Eligibility

- Candidates must have passed **FA/F.Sc. or an equivalent qualification** with a **minimum of 45% marks**.
- Must have passed the **HEC Law Admission Test (LAT)** with at least **50% marks** and also appear in the **PU Admission Test**.
- PU has recently **removed the session gap condition**, meaning students with academic breaks can still apply.

Merit & Seat Allocation

- Details such as **merit formula, reserved seats, and open vs. self-finance quotas** are typically outlined in the **Admissions Regulations** and are shared via PU's official notices and website.

■ Program Structure & Duration

- It's a **4-year degree**, divided across **eight semesters** (semester system).

■ Application Process & Timeline (Typical Flow)

1. **Monitor Admission Notices:** PU issues an official **Admission Notice** each year for the LL.B. 4-Year Program—check PU's website or Punjab University Law College (PULC).
2. **Eligibility Check:** Ensure you meet marks criteria, LAT score, and have appeared in PU Admission Test.
3. **Apply Online:** Through PU's admissions portal (e.g., *admissions.pu.edu.pk*), once applications open.
4. **Merit Lists Published:** Admission is based on merit; check official dates.
5. **Document Submission & Fee Payment:** Follow instructions for fee deadlines and formalities.
6. **Classes Commence:** After official start dates (varies—check your campus).

■ Admission Fee and Quotas

- Admission fee: ___ non-refundable to be paid via Bank (HBL, UBL) or mobile banking (1Bill), with the payment proof uploaded online.
- You can apply under **open merit** and, if eligible, **reserved quotas** (e.g., kinship). For reserved seats, a valid **kinship certificate** is required.

■ Summary Table

Feature	Details
Program Type	LL.B. 4-Year (Semester System)
Available Campuses	Lahore (Quaid-e-Azam), Gujranwala, Jhelum, Pothowar (Gujjar Khan)
Academic Requirement	FA/F.Sc. or equivalent with $\geq 45\%$
LAT Requirement	Must pass HEC LAT with $\geq 50\%$
PU Admission Test	Appearance mandatory
Session Gap Rule	Removed—no academic break restrictions
Age Limit	No Age Limit.
Seat Allocation	Divided into open merit and self-finance (as per official rules)
Application Method	Online via PU admissions portal

FORMAT FOR LL.B (4-YEARS) DEGREE PROGRAMME

→ Eligibility / Pre-requisite for Admission:

- FA / F.Sc. or equivalent

→ Program Structure:

- **Total Credit Hours:** 166
- **Duration:** 4 Years
- **Semester Duration:** 16–18 weeks
- **Course Load per Semester:** 15–18 Credit Hours
- **Number of Courses per Semester:** 5–6 Courses

→ Course Distribution:

- **Compulsory Courses (10):** 28 Credits
- **General & Non-Law Courses (08):** 24 Credits
- **Law-Specific & Major Courses (34):** 102 Credits
- **Elective Courses within Major (04):** 12 Credits

→ Scheme of Studies:

The scheme of studies has been designed in accordance with **HEC standards**. The Committee has finalized the draft curriculum for the **LLB (4-Year) Program**, with clearly defined **Learning Objectives** and **Learning Outcomes**. Introductory notes have been prepared for newly introduced courses. Recommended textbooks and reading materials have been revised and updated. Complete course contents for compulsory and supportive (non-law) courses have been provided with detailed reading lists. Elective course details may be developed by individual universities for consideration by the **NCRC**. Course codes assigned are suggestive and may be modified by universities according to their own coding scheme.

→ Learning Objectives:

The structure and content of the program aim to:

- Inculcate in students a broad understanding of the social, political, and economic contexts of Pakistani and global legal systems.
- Equip students with sound knowledge of fundamental doctrines and principles of law.
- Develop intellectual and practical skills required for employment in the legal profession and related fields.

→ Learning Outcomes:

- Students will be able to analyze, evaluate, synthesize, and apply legal knowledge to practical problems.
- Emphasis will be placed on independent thinking, planning, and conducting research using basic legal research skills and methodologies.
- The program will enhance students' written and oral communication skills, problem-solving abilities, and IT competence.
- Students wishing to change their field of study may seek **credit transfer or exemptions** through their respective universities/institutions.
- Students completing the first **four semesters** may be awarded an **Associate Degree in Legal Studies**.

MODEL QUESTION PAPER

(Fully Solved)

University of the Punjab

LL.B (4 Years) – Semester II**Subject: Quantitative Reasoning-II****Revised Syllabus: 2026–2029****Code: 201****Time Allowed: 3 Hours****Maximum Marks: 100**

Instructions:

1. Attempt **all questions**.
 2. There is **no choice** under the revised syllabus.
 3. Each question carries **equal marks**.
 4. Answers should be supported with relevant references and examples where necessary.
-
-

- Q1.** Define logic and discuss its importance in legal studies and decision-making. Explain how logical reasoning helps lawyers and judges analyze legal arguments.
- Q2.** Compare and contrast **inductive, deductive, and abductive reasoning**. Illustrate each type with a relevant legal or real-life example.
- Q3.** Explain the concepts of **propositions, arguments, validity, and invalidity**. How can truth tables be used to determine the validity of logical arguments?
- Q4.** Describe **Venn Diagrams, predicates, and quantifiers**. How are these tools used to represent and analyze logical relationships?
- Q5.** What is a deterministic mathematical model? Discuss its characteristics and applications in solving real-world problems.
- Q6.** Explain how **linear functions** can be used for mathematical modeling. Develop and interpret a linear model for a practical situation of your choice.
- Q7.** Discuss the concept of a **system of linear equations** and its solutions. Explain graphical and algebraic methods for solving such systems.
- Q8.** Explain the basic concepts of **probability models, Normal Distribution, and Binomial Distribution** with examples.
- Q9.** Discuss **Pearson correlation** and **simple linear regression**. How do they help in analyzing relationships between variables?
- Q10.** Explain the concept of **statistical inference** in decision-making and discuss the significance of the **Chi-Square Test of Association**.

For Answers, see relevant portion of this book
