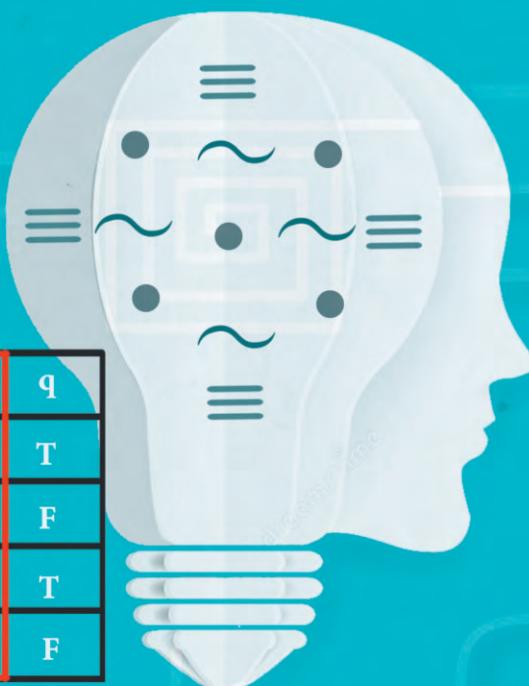
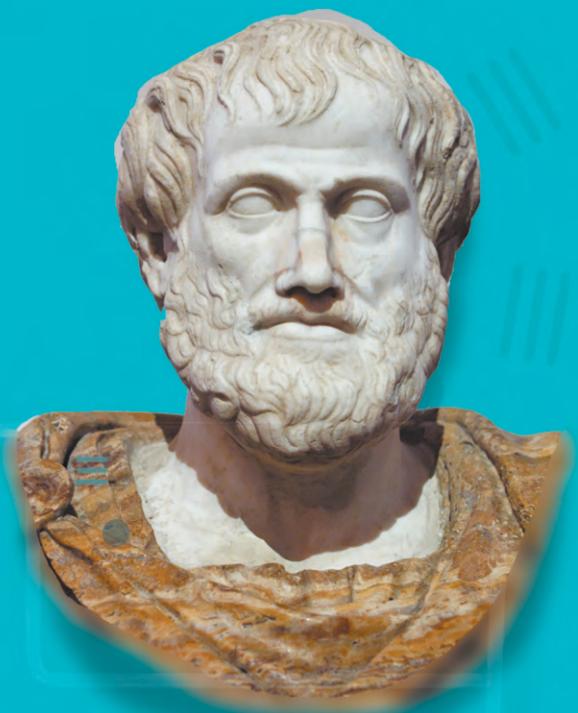




LOGIC

STANDARD XI



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The Constitution of India

Chapter IV A

Fundamental Duties

ARTICLE 51A

Fundamental Duties- It shall be the duty of every citizen of India-

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities, to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- (k) who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years.

The coordination committee formed by GR No Abhyas - 2116 (Pra. Kra. 43/16) SD-4 Dated 25.4.2016 has given approval to prescribe this textbook in its meeting held on 20.06.2019 and it has been decided to implement it from the educational year 2019-20.

LOGIC

STANDARD XI



2019

**Maharashtra State Bureau of Textbook Production and
Curriculum Research, Pune.**



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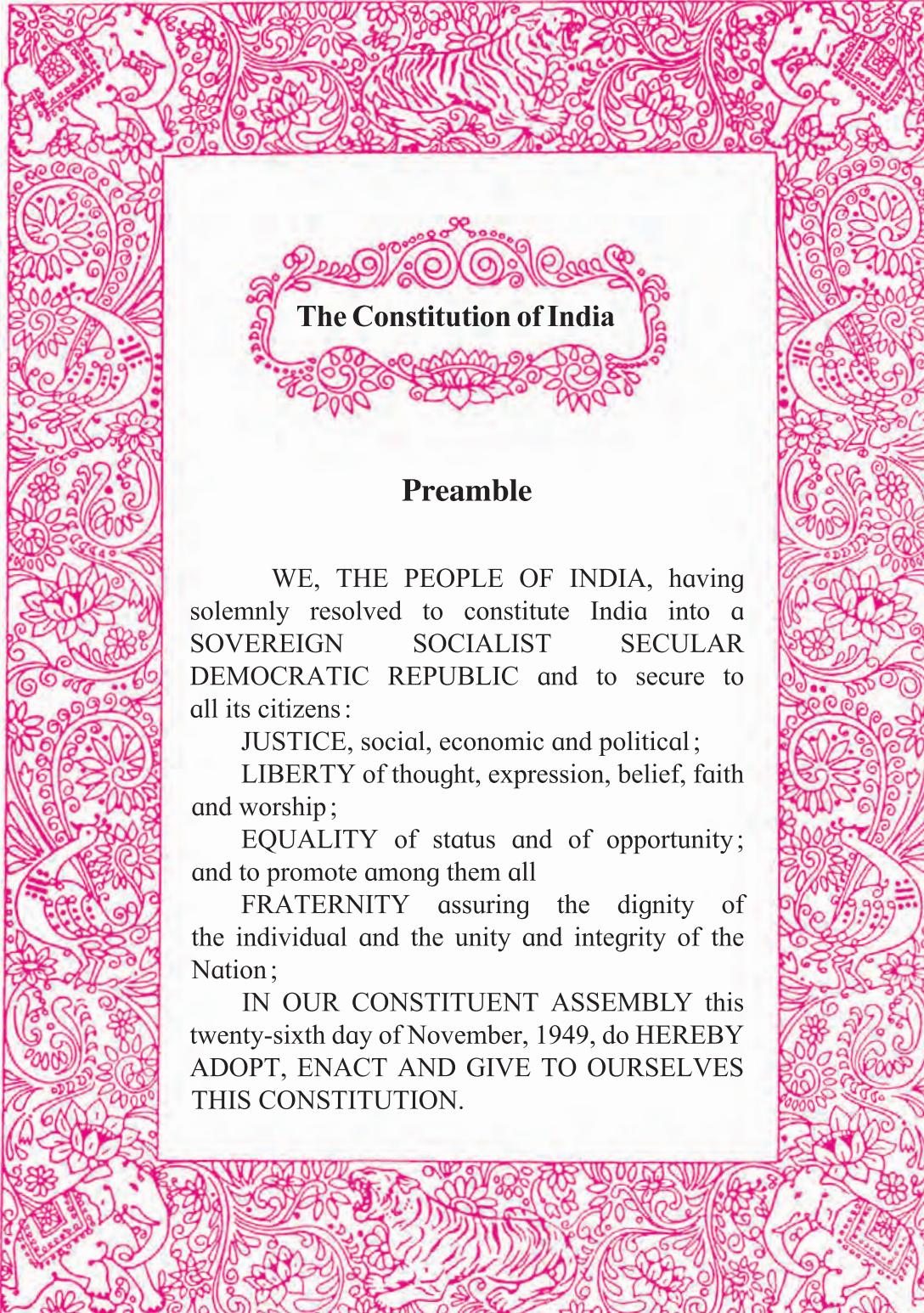
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The Constitution of India

Preamble

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC and to secure to all its citizens :

JUSTICE, social, economic and political ;

LIBERTY of thought, expression, belief, faith and worship ;

EQUALITY of status and of opportunity ; and to promote among them all

FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation ;

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.

NATIONAL ANTHEM

Jana-gana-mana-adhināyaka jaya hē
Bhārata-bhāgya-vidhātā,

Panjāba-Sindhu-Gujarāta-Marāthā
Drāvida-Utkala-Banga

Vindhya-Himāchala-Yamunā-Gangā
uchchala-jaladhi-taranga

Tava subha nāmē jāgē, tava subha āsisa māgē,
gāhē tava jaya-gāthā,

Jana-gana-mangala-dāyaka jaya hē
Bhārata-bhāgya-vidhātā,

Jaya hē, Jaya hē, Jaya hē,
Jaya jaya jaya, jaya hē.

PLEDGE

India is my country. All Indians
are my brothers and sisters.

I love my country, and I am proud
of its rich and varied heritage. I shall
always strive to be worthy of it.

I shall give my parents, teachers
and all elders respect, and treat
everyone with courtesy.

To my country and my people,
I pledge my devotion. In their
well-being and prosperity alone lies
my happiness.

PREFACE

Maharashtra State Bureau of Textbook Production & Curriculum Research, Pune, takes immense pleasure to introduce 'Logic' as a subject for Standard XI. Logic is a science of reasoning. 'Rationality' is fundamental distinguishing characteristic of human being. This unique ability helps man to draw conclusions from the available information. Though ability to reason is an inbuilt feature of human beings, logicians have identified the rules of reasoning. Logic deals with these rules of reasoning. In logic one studies methods and principles of logic which enables one to distinguish between good and bad reasoning. Training in logic sharpens our ability to reason correctly and detect fallacies in reasoning if any. Logic, therefore is a fundamental discipline, useful to all branches of knowledge.

With the introduction of logic at Standard XI students will be able to understand, argue and convince with considerable amount of maturity. Study of logic will enrich their ability of logical, analytical and critical thinking.

The aim of this textbook is to explain basic principles of logic and their applications. We have tried to make this textbook more interesting and activity based, which will facilitate easy understanding of the subject and create interest in the subject. The textbook is written keeping in mind needs of students from both urban and rural areas.

Various activity based questions, exercises, puzzles given in the textbook will help students to understand the basic concepts of logic and master the methods of logic. Q.R. code is given on the first page of the textbook. You will like the information provided by it.

The bureau of textbook is thankful to the Logic Subject Committee and Study Group, Scrutiny and Quality Reviewers and Artist for their dedication and co-operation in preparing this textbook.

Hope, Students, Teachers and Parents will welcome this textbook.



(Dr. Sunil Magar)
Director

Pune
Date : 20 June 2019
Indian Solar Date : 30 Jyestha 1941

Maharashtra State Bureau of
Text Book Production and
Curriculum Research, Pune

For Teachers

We are happy to introduce 'Logic' textbook for standard XI. As per the revised syllabus, two new topics are added in this textbook. These are : Origin and development of logic and Application of logic. Accordingly students will get brief information about historical development of Western as well as Indian logic. It will be interesting for students to know how logic has developed globally. Information about origin and development of Indian Logic will facilitate in enhancing pride in students mind about Indian contribution to the subject.

Logic is a fundamental subject and basis of all the branches of knowledge. The chapter, Application of logic illustrates the importance of logic in day to day life as well as in the important fields like - Law, Science and Computer science. This chapter will enable students to understand the importance of logical thinking while taking decisions in personal as well as professional life. They will also realize how taking rational decisions at right time can lead to success and happiness in life. Importance of logic can be highlighted by informing students, how study of logic can help them to appear for various competitive exams, which test the reasoning ability of students.

Logic as an independent subject is introduced as standard XI. At this stage students begin to think independently and express their thoughts and opinions. Logic being the science of reasoning, can help students in consistent and logical thinking. As teachers of logic it is our responsibility to train students to think rationally and reason correctly.

As Standard XI is the first year of studying logic, it is necessary for teachers to take in to account students age and level of understanding. Logic studies abstract concepts, so the important concepts in logic need to be explained step by step, in easy to understand language and by giving examples and various activities in such a way that, students can relate the subject to their experiences in life. Keeping this in mind the textbook is made activity based. Teachers are expected to make use of various examples, teaching aids and activities like debates, logical puzzles and giving examples of good arguments and fallacies from everyday experience. In this way teaching and learning can become interesting and enjoyable experience for both students and teachers.

Competency Statements

Competency

- To acquire knowledge about the origin and development of logic.
- To understand the importance of logical thinking.
- To acquire knowledge about the fundamental concepts and principles of logic.
- To understand the types of argument and develop the ability to recognize the types of argument.
- To develop the ability of rational thinking.
- To understand the difference between sentence and proposition.
- To study the characteristics of propositions.
- To understand the types of propositions and to develop the ability to symbolize the propositions.
- To study the basic truth-tables.
- To study the method of truth-table.
- To develop the ability to apply the method of truth-table to decide whether a statement form is tautologous or not and to decide the validity of arguments.
- To study the method of deductive proof
- To develop the ability to prove the validity of deductive argument. by the method of direct deductive proof.
- To understand the need and importance of induction.
- To acquire knowledge about the types of inductive arguments and their use in our day to day life and science.
- To develop the ability of recognizing the types of inductive arguments.
- To enhance argumentation skills.
- To understand the different types of fallacies.
- To develop the ability of recognizing the types of fallacies.
- To develop the ability to reason correctly and to detect errors in others argument.
- To understand the application of logic in day to day life, in the field of law, science and Computer science.

INDEX

Chapter No.	Title	Page No.
1.	Nature of Logic	1
2.	Nature of Proposition	12
3.	Decision Procedure	31
4.	The Method of Deduction	46
5.	Inductive Inference and its type	64
6.	Fallacies	72
7.	Application of Logic	84