

# City Montessori School, Lucknow

## Syllabus 2021 – 2022

### Class XII

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**NOTE:** Please refer to ISC Council Syllabus and Scope of Syllabus 2022 for further reference.

## AIMS AND OBJECTIVES

### MORAL EDUCATION:

1. To develop in every student the essential elements of morality.
2. To develop the values and capabilities necessary for making right decisions and upright conduct.
3. To develop in them the attitude of open mindedness, to appreciate and be ready to accept others and to act constructively not defensively.
4. To develop the skill of striving not only for good but to handle the conflicting situations without demeaning self and others.
5. To develop the ability to monitor themselves and find out constructive ways of conflict resolutions.
6. To promote the development of good character for the purpose of lessening crime and raising the standard of good citizenship.

### ENGLISH LANGUAGE:

1. To develop habits of:
  - a. clear articulate expression, using accepted syntactical forms and structures with a firm grasp of idioms;
  - b. critical thinking, involving assessment and analysis of the written material provided.
2. To develop the capacity to critically and innovatively examine and to assess the value of passages of argumentative writing, to consider the assumptions upon which the arguments rest and to trace the implications that follow.
3. To develop adequate and appropriate vocabulary.
4. To develop the ability to comprehend and appreciate good prose.

### ENGLISH (Prescribed Texts):

1. To develop an appreciation of literature through a critical study of selected literary works.
2. To help students achieve through the study of literature, an understanding of the study of man.
3. To create an interest in the warp of thought, which differs from that of the group to which, the student belongs.
4. To develop the power of expression.

### HINDI:

1. To develop habits of clear articulate expression using accepted syntactical forms and structures, with a firm grasp of idiom and to comprehend and appreciate good prose.
2. To expose candidates to a deeper knowledge and appreciation of literary works in the language.

### HISTORY:

1. To provide accurate knowledge of the most significant events and personalities of the period under study in sequence and in context.
2. To familiarise candidates with factual evidence.
3. To develop an understanding of the existence of problems and relevance of evidence of explanations.
4. To develop the capacity to marshal facts and evaluate evidence and to discuss issues from a historical point of view.
5. To develop the capacity to read historical views in the light of new evidence or new interpretation of evidence.

**Progress is the activity of today and assurance of tomorrow. – Emerson**  
**Class XII**

6. To foster a sense of historical continuity.
7. To familiarise candidates with various types of historical evidence and to provide some awareness of the problems involved in evaluating different kind of source materials.

**PSYCHOLOGY:**

1. To develop an understanding of human behaviour: the nature of individuals and of members of social groups.
2. To develop an understanding of the methods of research and study employed in psychology.
3. To develop an appreciation of the practical value of psychology and its applications in daily life.

**ECONOMICS:**

1. To enable candidates to acquire knowledge, information and develop an understanding of facts, terms, concepts, conventions, trends, principles, generalisations, assumptions, hypothesis, problems, processes etc. in economics.
2. To acquaint candidates with tools of economic analysis.
3. To develop an understanding of important economic problems.
4. To acquaint candidates with the main institutions through which the productive process is carried out.
5. To develop an understanding of the role of institutions in the functioning of an economy.
6. To enable candidates to compare their own economic structure with that of the other areas of the world.

**COMMERCE:**

1. To develop an interest in the theory and practice of business, trade and industry.
2. To familiarise candidates with theoretical foundations, organising, managing and handling operations of a business firm.
3. To provide a study of the more important aspects of the commercial world.
4. To provide knowledge of the activities of commerce in the marketing of goods and services.

**ACCOUNTS:**

1. To provide an understanding of the principles of accounts and practice in recording transactions and interpreting individual as well as company accounts.
2. To develop an understanding of the form and classification of financial statements as a means of communicating financial information.

**Progress is the activity of today and assurance of tomorrow. – Emerson**

**MATHEMATICS:**

1. To enable candidates to acquire knowledge and to develop an understanding of the terms, concepts, symbols, definitions, principles, processes, formulae and theorems of mathematics.
2. To develop the ability to apply the knowledge and understanding of mathematics to unfamiliar situations or to new problems.
3. To develop skills of –
  - a. computation
  - b. drawing geometrical figures and graphs
  - c. reading tables, charts, graphs, etc.
4. To develop an appreciation of the role of mathematics in day-to-day life.
5. To develop an interest in mathematics.
6. To develop mathematical aptitude through the study of mathematics.

**PHYSICS:**

1. To enable candidates to acquire knowledge and to develop an understanding of the terms, facts, concepts, definitions, fundamental laws, principles and processes in the field of physics.
2. To develop the ability to apply the knowledge and understanding of physics to unfamiliar situations.
3. To develop a scientific attitude.
4. To develop skills in –
  - a. the practical aspects of handling apparatus, recording observations and
  - b. Drawing diagrams, graphs etc.
5. To develop an appreciation of the contribution of physics towards scientific and technological developments and towards human happiness.

**CHEMISTRY:**

1. To foster acquisition of knowledge and understanding of terms concepts, fact, processes and principles.
2. To develop the ability to apply the knowledge of contents and principles of chemistry in unfamiliar situations.
3. To develop skills in proper handling of chemicals and apparatus.
4. To develop and ability to appreciate achievements and its role in nature and society.
5. To develop an interest in activities involving the usage of the knowledge of chemistry.

**BIOLOGY:**

1. To enable candidates to acquire the knowledge and to develop an understanding of biological terms, concepts, facts, formulae, etc.
2. To create awareness about the problems of the environment and the manner in which these problems can be overcome.
3. To develop the ability to appreciate biological phenomena in nature and the contribution of biology to human welfare.
4. To develop interest in plants and animals and their respective environments.
5. To develop scientific attitude towards scientific phenomena.
6. To create awareness of the fundamentals of human biology, food, health, nutrition and population control.

**COMPUTER SCIENCE:**

1. To enable students to comprehend basic concepts and practices for problem solving.
2. To develop an understanding of how computers store and process data.
3. To develop the ability to describe the major components of computer hardware and their functions and interactions.
4. To develop the ability to analyse applications and systems of interacting objects.
5. To develop the ability to code, test, debug, document and validate programs to implement various algorithms.
6. To develop an appreciation of the implications of computer use in everyday life in contemporary society.

**BIOTECHNOLOGY:**

1. To enable candidates to acquire the knowledge and develop an understanding of how materials are provided by biological agents to provide goods and services.
2. To appreciate the role played by biotechnology in improving health care of human beings.
3. To understand the interdisciplinary nature of this subject.
4. To create awareness about the appreciation of biological processes to industries.
5. To develop the ability to appreciate biological phenomenon in nature and the contribution of biotechnology to human welfare.
6. To develop scientific attitude towards biological phenomenon.

**MORAL EDUCATION**

**Name of the Textbook: Pathfinders, Book - 2**  
**Publisher: FAS**

APRIL - NOVEMBER			
Suggested Month	Chapter Number	Name of the Chapter	
April-May	7	The Mystery of Pain	39
July-August	8	The Purpose of Life	47
November	9	Putting Knowledge into Action	54

**Note:** Written work for every chapter mentioned above.

- Competence Building
- Group discussion.

**ENGLISH LANGUAGE**

**Note:** English Language test papers to be prescribed by the subject teachers at the branch level.

Question No.	Topics
<b>1.</b>	<b>Composition:</b>
<b>a</b>	narrative
<b>b</b>	descriptive
<b>c</b>	reflective
<b>d</b>	discursive
<b>e</b>	argumentative
<b>f</b>	story writing
<b>2. (a)</b>	<b>Directed Writing:</b>
	Report Writing
(i)	- an accident
(ii)	- a natural calamity
(iii)	- coverage of an official function
(iv)	- visit of a dignitary
(v)	- an incident
	Speech writing

	Article Writing:
	Film review
	Book review
	Review of cultural programme
	Statement of purpose
	Personal profile
<b>2(b)</b>	<b>Proposal Writing</b>
<b>3.</b>	<b>Functional Grammar:</b>
<b>a</b>	transformation of sentences
<b>b</b>	prepositions
<b>c</b>	tenses
<b>4.</b>	<b>Comprehension:</b>
<b>a (i)</b>	synonymous words
<b>(ii)</b>	different meaning sentences
<b>b</b>	comprehension questions
<b>c</b>	précis writing
<b>July</b>	<b>FIRST COMPARATIVE EXAMINATION</b>
<b>November - December</b>	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>
<b>January</b>	<b>SECOND PRE-BOARD EXAMINATION</b>
<b>January - February</b>	<b>THIRD PRE-BOARD EXAMINATION</b>
(* One Complete Test Paper to be done every month)	

**Paper 1: English Language (3 hours, 80 marks)**

**Question 1** – A composition on one of a number of subjects. (400-450 words)

... **20 marks**

**Question 2(a)** – A short composition based on the information and ideas provided.

(300 words) ... **15 marks**

**Question 2(b)** – Proposal Writing (150 words) ... **10 marks**

**Question 3** – Short-answer questions to test grammar, structure and usage.

... **15 marks**

**Question 4** – Comprehension (about 500 words will be provided) ... **20 marks**

**Project Work ... 20 marks**

**Note: Please refer to the Council Syllabus 2022.**

**PROPOSAL WRITING**

**Guidelines and marks distribution for Proposal Writing, question 2(b)**

**General Instructions:**

- Only student centric topics should be given for writing a proposal.
- Word limit is approximately 150 words. However, it should not exceed 160 words.
- It should be divided into three distinct parts i.e., the Heading, Objective and Measures.
- Heading and Objective must be written in a **paragraph** form and Measures in numbers and points / bullets.
- After each heading, using a colon sign (:) is a must.
- All paragraphs must be aligned towards the left.

**1. Heading:** The candidates will be required to convey the specific task that the project is supposed to achieve. It should be creative, clear and concise and have atleast two points to define the purpose.

**2. Objective:** The candidates will be required to explain the goals and objectives of the proposed project. At least **two objectives in a paragraph** should be stated clearly.

**3. Measures:** The candidates will be required to explain the specific steps and method of what is to be done as:

1. What do they plan to do?
2. Total number of members involved in the project
3. Proposed activities
4. Time that will be taken to complete the project
5. Budgetary and non-financial needs, i.e. How much money will be spent on the project and what non-financial resources are required? (human capital, infrastructure, other resources required, etc.)

Concluding sentence: The proposal should be concluded with a sentence stating that you are hopeful that your proposal will be accepted.

Based on the above mentioned points, the mark distribution for different heads under proposal writing is as follows:

**Maximum Marks: 10**

**Heading: 2**

**Objectives: 2** (Objectives + Expression)

**Measures: 4**

**Linguistic ability 2**

**SPECIMEN FOR PROPOSAL WRITING**  
**PROPOSAL FOR SETTING UP A SCIENCE CLUB**

Heading/Introduction: To foster an interest in Science outside the classroom and introduce students to the wonders and relevance of Science in our lives, we propose to set up a Science Club in school.
<i>(maximum 2 sentences – 2 marks)</i>
Objectives: A Science Club will help students overcome their phobias regarding Science. It will be instrumental in developing the scientific curiosity of students through its activities and programmes.
<i>(minimum 2 points – 2 marks)</i>
List of Measures:
<ul style="list-style-type: none"> <li>The middle-school activity room will be used as the room for all Science Club meetings and activities.</li> <li>The meetings will take place once a week after school from 2.00 pm till 3.30 pm. Any activities such as talks by scientists or competitions will take place on Saturdays.</li> <li>Membership of the Science Club will be open to all students from Classes VI to XII. The Club President will be Mr. Sinha, our Senior Physics Teacher. Eight other office bearers will be elected from the members of the Club.</li> <li>Club membership has been fixed at Rs. 250/- per member per year.</li> <li>The Club will have a range of activities ranging from Science Fairs, Robot making, creating slogans and posters, documentaries and so on.</li> </ul>
<i>(minimum 4 points – 4 marks)</i>
We hope that the proposal will be accepted so that the Science Club becomes a reality in the life of the school.
<i>(linguistic ability – 2 marks)</i>
<b>[Total – 10 marks]</b>
<b>IMPORTANT NOTICE: It is suggested that while writing a proposal, the students provide an apt title, a Heading i.e. an introduction of about 2 sentences, a minimum of 2 objectives and a list of measures of a minimum of 4 points. The proposal should be concluded with an appropriate sentence, 2 marks will be awarded for linguistic ability.</b>

**LITERATURE IN ENGLISH (Prescribed Texts)**

- Name of the Textbook:**
- The Tempest (Turner Edition)
  - Echoes: A Collection of ISC Short Stories
  - Reverie: A Collection of ISC Poems
- Author:**
- William Shakespeare
- Publisher:**
- S. Chand
  - Evergreen Publications (India) Ltd., New Delhi
  - Evergreen Publications (India) Ltd., New Delhi

Suggested Month	Name of the Chapter	Page
April-May	<b>The Tempest</b>	
	Act IV (Lines 1 - 164)	94-104
	<b>Echoes: A Collection of ISC Short Stories</b>	
	The Story of an Hour	90
	<b>Reverie: A Collection of ISC Poems</b>	
	The Darkling Thrush	5
<b>July</b>	<b>FIRST COMPARATIVE EXAMINATION</b>	
July – August	<b>The Tempest</b>	
	Act IV (Lines 165-265)	104-110
	Act V	110-130
	<b>Echoes: A Collection of ISC Short Stories</b>	
	To Build a Fire	34
	A Gorilla in the Guest Room	
	<b>Reverie: A Collection of ISC Poems</b>	
	Birches	8
	Crossing the Bar	15
	<b>Echoes: A Collection of ISC Short Stories</b>	
September – October	The Singing Lesson	53
	The Sound Machine	98

	B. Wordsworth	115
	<b>Reverie: A Collection of ISC Poems</b>	
	The Desiderata	22
	Dover Beach	25
	We are the Music Makers	31
<b>November</b>	Revision	
<b>November - December</b>	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>	
<b>January</b>	<b>SECOND PRE-BOARD EXAMINATION</b>	
<b>January - February</b>	<b>THIRD PRE-BOARD EXAMINATION</b>	

**Paper 2 Theory: Prescribed Texts (3 hours, 80 marks)**

**Project Work ...20 marks**

Candidates will be required to answer **five** questions as follows:

**One** textual question (compulsory) on the Shakespeare play together with **four** other questions on at least **three** texts, which may include the Shakespeare play.

Question 1 compulsory ... 15 marks, **four** other questions, each carrying 15 marks.

**(Note:** Candidates are reminded that infringement of the rubric will certainly invite penalty during the marking of answer scripts.)

The textual questions, which will be set on the Shakespeare play will contain **three** short passages and candidates will be required to answer questions set on **two** of the passages. These questions may require candidates to explain words and phrases, to rewrite passages in modern English, or to relate an extract to the work as a whole.

The rest of the questions on the Shakespeare play and on other prescribed texts will be set on the context, plot or plots, characters and other prominent literary qualities of the works prescribed.

It is recommended that in **Paper 2 about 35 minutes** should be spent on every question.

**Note: Please refer to the Council Syllabus 2022**

## हिंदी

Name of Textbook	Author	Publication
1. गद्य संकलन	: ISC Collection of Short Stories & Essays	एवरग्रीन पब्लिकेशन्स
2. काव्य मंजरी	: ISC Collection of Poems	एवरग्रीन पब्लिकेशन्स
3. सारा आकाश	: राजेन्द्र यादव	इंटर यूनिवर्सिटी प्रेस
4. व्याकरण मंजूषा	: विनोदिनी शर्मा	इंटर यूनिवर्सिटी प्रेस

Suggested Month	Name of the Book	Name of the Chapter
April	गद्य संकलन	क्या निराश हुआ जाए
May	काव्य मंजरी	उद्यमी नर
		पुनरावृत्ति – साखी, बाल-लीला, एक फूल की चाह, पुत्र-प्रेम, गौरी, शरणागत
	व्याकरण	अपठित गद्यांश, निबंधों की पुनरावृत्ति
	सारा आकाश	उत्तरार्द्ध: सुबह – अंश 1, 2
		पुनरावृत्ति – पूर्वार्द्ध 1 – 10
	व्याकरण	मुहावरे, वाक्य संशोधन
<b>July</b>	<b>FIRST COMPARATIVE EXAMINATION</b>	
August	गद्य संकलन	दासी
	काव्य मंजरी	तुलसी के पद, जाग तुझको दूर जाना
		पुनरावृत्ति – सती, आउटसाइडर, आ: धरती कितना देती है
	सारा आकाश	अंश 3, 4
	व्याकरण	निबन्ध – विचारात्मक मुहावरे, वाक्य संशोधन – (मौखिक)
September-October	गद्य संकलन	संस्कृति क्या है ?, भक्तिन
		परियोजना कार्य
	काव्य मंजरी	बादल को घिरते देखा है
		पुनरावृत्ति – नदी के द्वीप
	सारा आकाश	अंश 5, 6, 7
	व्याकरण	मौलिक कहानी
	गद्य संकलन	मजबूरी
November	सारा आकाश	अंश 8, 9, 10
	काव्य मंजरी	अंधेरे का दीपक

	व्याकरण	निबन्ध – वर्णनात्मक, समस्या मूलक मुहावरे, वाक्य संशोधन
	सारा आकाश	पुनरावृत्ति
		मॉडल प्रश्न पत्रों का अभ्यास
November-December	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>	
January	<b>SECOND PRE BOARD EXAMINATION</b>	
January-February	<b>THIRD PRE BOARD EXAMINATION</b>	

1. There will be **one** paper of **3** hours duration, which will consist of two sections:

**Section A:** Language (40 marks)

**Section B:** Prescribed Textbooks (40 marks)      **40 + 40 + 20 = 100**

**Internal Assessment** (20 marks)

2. Candidates will be required to answer **four** questions on **at least three** of the prescribed textbooks.

3. Refer to the Council Syllabus 2022 for further details.

## HISTORY

**Name of the Textbook:** 1. Mastering World History by Lowe  
2. ISC History Part – II by S. N. Banerjee  
3. Modern Indian History – 2 by D N Kundra

**Publisher:** 1. Macmillan  
2. Kalyani  
3. Navdeep

Suggested Month	Topic	Name of the Chapter
April – May	1	Towards Independence and Partition: The Last Phase (1935-1947)
	2	Establishment and Development of Indian Democracy (1947-1966)
	7	World War II
	10	Protest Movements (Civil Rights Movement, Anti Apartheid Movement and Feminist Movement)
<b>July</b>	<b>FIRST COMPARATIVE EXAMINATION</b>	
July	3	Challenges to Indian Democracy (1964-1977)
	4	Changing Face of the Indian Democracy (1977-1986)
	5	India's Foreign Policy
August	8	De-Colonisation in Asia (China) and Africa (Ghana and Kenya)

	9	Cold War 1945-1991: Origin, Course, End and Impact
September-October	11	Middle East: Israel-Palestine Conflict (1916-1993)
	6	Movements for Women's Rights
	<b>REVISION</b>	
November-December	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>	
January	<b>SECOND PRE BOARD EXAMINATION</b>	
January-February	<b>THIRD PRE BOARD EXAMINATION</b>	

There will be one paper of three hours duration of 80 marks divided into two parts.

**Part I (20 marks)** will consist of compulsory short answer questions testing fundamental factual knowledge and understanding of the entire syllabus.

**Part II (60 marks)** will be divided into **two** sections, Section **A** and Section **B**, each consisting of **five** questions. Each question shall carry 12 marks.

Candidates will be required to attempt **two** questions from each section and **one** question from either Section A or Section B. A total of **five** questions will be attempted from Part II.

Please refer to the Council Syllabus 2022 for details.

## PSYCHOLOGY

**Name of the Textbook:** 1. Psychology  
2. Introduction to Psychology

**Author:** 1. Robert Baron  
2. Morgan & King

**Publisher:** 1. Pearson  
2. Tata McGraw Hill

Suggested Month	Name of the Chapter
April-May	Personality
	Stress and Stress Management
	Attitudes
	<b>REVISION</b>
July	<b>FIRST COMPARATIVE EXAMINATION</b>
July - November	Lifespan Development – Meaning of development, growth and maturation, infancy, childhood and adolescence – motor, cognitive and socio – emotional development
	Intelligence
	Psychological Disorders and Psychotherapy

	Achievement
	Interests
	Aptitude
	Applications of Psychology
	Personality Assessment
	Prejudices
	<b>REVISION</b>
<b>November-December</b>	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE-BOARD EXAMINATION)</b>
<b>January</b>	<b>SECOND PRE-BOARD EXAMINATION</b>
<b>January-February</b>	<b>THIRD PRE-BOARD EXAMINATION</b>
<b>Internal Assessment</b> – Two studies to be conducted on topics given in the Council syllabus and as guided by the subject teacher.	

\* There will be two papers in the subject.

**Paper I – Theory:** Three hours ... 70 marks

**Paper II – Practical work** ... 30 marks

Paper I (Theory) – 70 marks

**Part I (20 marks)** will consist of **compulsory** short answer questions relating to the fundamental aspects of the entire syllabus.

**Part II (50 marks)** will consist of **two** sections A and B.

Candidates will be required to answer **two** out of **three** questions from Section A and **three** out of **five** questions from Section B. Each question in this part shall carry **10 marks**.

**Please refer to the Council Syllabus 2022 for details.**

## ECONOMICS

**Name of the Textbook:** Frank ISC Economics Class XII

**Author:** D.K. Sethi & U. Andrews

**Publisher:** Frank Bros. & Co.

Suggested Month	Chapter Number	Name of the Chapter
April-May	2	Demand and Law of Demand
	4	Elasticity of Demand
	13	Money: Meaning and Functions
	14	Banks:

		Commercial Banks and Central Banks
	5	Supply – Law of Supply and Price Elasticity of Supply
	6	Market Mechanism: Equilibrium Price and Quantity in a Competitive Market
July	<b>FIRST COMPARATIVE EXAMINATION</b>	
	3	Theory of Consumer Behaviour: Marginal Utility and Indifference Curve Analysis
	7	Laws of Returns: Returns to a Factor
	8	Cost of Revenue Analysis
August	9	Forms of Market
	10	Producer's Equilibrium
	11	Determination of Equilibrium Price and Output Under Perfect Competition
	12	Theory of Income and Employment (till determination of equilibrium income and output)
September	18	National Income and Circular Flow Of Income
	19	National Income Aggregates
	20	Methods of Measuring National Income
	<b>Submission of 1<sup>st</sup> Project</b>	
October	15	Balance of Payments and Exchange Rate
	16	Fiscal Policy
	17	Government Budget
November		<b>Submission of 2<sup>nd</sup> Project</b>
	<b>REVISION</b>	
<b>November-December</b>	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE-BOARD EXAMINATION)</b>	
<b>January</b>	<b>SECOND PRE-BOARD EXAMINATION</b>	
<b>January-February</b>	<b>THIRD PRE-BOARD EXAMINATION</b>	

There will be **two** papers in the subject.

**Paper I – THEORY: 3 hours - 80 marks**

**Part I (20 marks)** will consist of compulsory short answer questions testing knowledge, application and skills relating to elementary / fundamental aspects of the entire syllabus.

**Part II (60 marks)** will consist of **eight** questions out of which the candidates will be required to answer **five** questions, each carrying 12 marks.

**Paper II – PROJECT WORK - 20 marks**

**Refer to the Council Syllabus 2022 for details.**



## COMMERCE

**Name of the Textbook:** S. Chand's ISC Commerce Volume-II (for Class XII)  
**Author:** Dr C.B. Gupta  
**Publisher:** S. Chand School

Suggested Month	Chapter Number	Name of the Chapter
April – May	1	Business Environment
	2	Capital - Fixed and Working
	3	Sources of Finance for a Joint Stock Company
	4	Banking- Latest Trends
July	<b>FIRST COMPARATIVE EXAMINATION</b>	
July	15	Consumer Protection
	5	Management- Meaning, Nature and Importance
August – September	6	Principles of Management
	7	Coordination
	8	Planning
		<b>Submission of 1st Project</b>
	9	Organising
	10	Staffing
	11	Directing
October – November	12	Controlling
	13	Marketing-Concept and Functions
	14	Marketing Mix
		<b>Submission of 2nd Project</b>
		<b>REVISION</b>
November-December	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE-BOARD EXAMINATION)</b>	
January	<b>SECOND PRE-BOARD EXAMINATION</b>	
January-February	<b>THIRD PRE-BOARD EXAMINATION</b>	

There will be two papers in the subject.

Paper I - Theory: 3 hours – 80 marks

**Part I (20 marks)** will consist of compulsory short answer questions testing knowledge, application and skills relating to elementary / fundamental aspects of the entire syllabus.

**Part II (60 marks)** will consist of **eight** questions out of which candidates will be required to answer **five** questions and each question will carry 12 marks.

**Paper II – Project Work – 20 marks**

**Note: Refer to the council syllabus 2022 for details.**

## ACCOUNTS

**Name of the Textbook:** New ISC Accountancy (Class XII)  
**Author:** D.K. Goel and Rajesh Goel  
**Publisher:** Avichal Publishing Company

Suggested Month	Chapter Number	Name of the Chapter
April-May	1	Accounting for Partnership Firms–Fundamentals
	9	Financial Statements of Companies / Electronic Spreadsheet
	11	Tools for Financial Analysis-Comparative Statements
	12	Common Size Statements
July	<b>FIRST COMPARATIVE EXAMINATION</b>	
	2	Goodwill: Concept and Valuation
	3	Admission of a Partner
		<b>Project 1</b>
August	3	Admission of a Partner (Continued)
	4	Retirement or Death of a Partner
	5	Dissolution of Partnership Firm
September	6	Company Accounts - Issue of Shares
	7	Company Accounts - Issue of Debentures / DBMS
October	8	Company Accounts - Redemption of Debentures
	10	Financial Statement Analysis
	13	Cash Flow Statement
	14	Ratio Analysis
		<b>Project 2</b>
November	14	Ratio Analysis (Continued)
		<b>REVISION</b>
November-December	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>	
January	<b>SECOND PRE-BOARD EXAMINATION</b>	
February	<b>THIRD PRE-BOARD EXAMINATION</b>	

There will be two papers in the subject.

**Paper I (Theory): 3 hours – 80 marks**

**Paper II (Project Work): – 20 marks**

**Paper I (Theory) – 80 marks**

There will be one paper of three hours duration of 80 marks divided into three Sections A, B and C.

It will be **compulsory** for all candidates to attempt **Section A**.

**Section A (60 Marks)** will consist of **two** parts, **Part I** and **Part II** and have a total of **eight** questions.

**Part I (12 marks):** will consist of **Question 1 (compulsory)**.

This question will include short answer questions, testing knowledge, application and skills relating to elementary/ fundamental aspects. Question 1 will be based on **Section A** of the syllabus.

**Part II (48 marks):** Candidates will be required to answer **four** questions out of **seven** from this part. Each question shall carry 12 marks. Part II will also be based on **Section A** of the syllabus.

**Section B/C (20 marks):** Candidates will have a choice of attempting questions **either** from **Section B** or **Section C**. Candidates will be required to answer **two** questions out of **three** from the section of their choice. Each question shall carry 10 marks.

Please refer council syllabus 2022 for details.

**MATHEMATICS**

**Name of the Textbook:** Understanding ISC Mathematics  
**Volumes I and II for Class XII**  
**(Reprint: 2021)**

**Author:** M. L. Aggarwal

**Publisher:** Arya Publications

Suggested Month	Chapter Number	Name of the Chapter
April - May		<b>Section A</b>
	1	Relations and Functions (Ex 1.1, Ex 1.3, Ex 1.5)
	2	Inverse Trigonometric Functions
	3	Matrices (Ex 3.1 to 3.4)
	4	Determinants (Ex 4.1, Ex 4.3, Ex 4.4, Ex 4.5)
	5	Differentiability (Ex 5.5 to 5.13)
	6	Indeterminate Forms (Ex 6.1, Ex 6.2)
		<b>Section B</b>
	1	Vectors

		<b>Section C</b>
	2	Linear Regression
	3	Linear Programming
July		<b>FIRST COMPARATIVE EXAMINATION</b>
July- November		<b>Section A</b>
	7	Applications of Derivatives
	8	Integrals
	9	Differential Equations
	10	Probability
	1	Relations and Functions (Ex 1.2, Ex 1.4, Ex 1.6)
	3	Matrices (Ex 3.5)
	4	Determinants (Ex 4.2)
	5	Continuity and Differentiability (Ex 5.1 to 5.4, Ex 5.14 and Ex 5.15)
	6	Indeterminate Forms (Ex 6.3)
		<b>Section B</b>
	2	Three Dimensional Geometry
	3	Applications of Integrals
		<b>Section C</b>
	1	Application of Calculus in Commerce and Economics
		<b>REVISION</b>
November- December		<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>
December		<b>REVISION</b>
January		<b>SECOND PRE BOARD EXAMINATION</b>
January- February		<b>THIRD PRE BOARD EXAMINATION</b>

There will be **two** papers in the subject:

**Paper I:** Theory (3 hours) – 80 marks

**Paper II:** Project Work – 20 marks

**Paper I (THEORY) – 80 Marks:**

The syllabus is divided into **three** sections A, B and C.

Section A is compulsory for all candidates. Candidates will have a choice of attempting questions from **EITHER** Section B **OR** Section C.

There will be one paper of **three** hours duration of 80 marks.

**Section A (65 Marks):** Candidates will be required to attempt **all** questions. Internal choice will be provided in two questions of two marks, two questions of four marks and two questions of six marks each.

**Section B / Section C (15 Marks):** Candidates will be required to attempt all questions **EITHER** from Section B **OR** Section C. Internal choice will be provided in one question of two marks and one question of four marks.

**Note: Please refer to the Council Syllabus 2022 for details.**

## PHYSICS

**Name of the Textbook:** Nootan ISC Physics for Class XII  
**(Part 1 and Part 2)**

**Authors:** Raj Kumar and G.L. Mittal (Nineteenth  
**Edition 2020-21)**

**Publisher:** Nageen Prakashan

Suggested Month	Topic Number	Name of the Topic
April-May		<b>UNIT 1: ELECTROSTATICS</b>
	1	Electric Charges and Fields
	2	Gauss' Theorem
	3	Electric Potential and Potential Energy
	4	Capacitors and Dielectrics
		<b>UNIT 2: CURRENT ELECTRICITY</b>
	5	Electric Resistance and Ohm's Law
	6	D.C. Circuits and Measurements
<b>July</b>		<b>FIRST COMPARATIVE EXAMINATION</b>
		<b>UNIT 3: MAGNETIC EFFECTS OF CURRENT AND MAGNETISM</b>
July-August	7	Moving Charges and Magnetism
	8	Torque on a Current Loop: Moving Coil Galvanometer
	9	Magnetic Field and Earth's Magnetism
	10	Magnetic Classification of Substances
		<b>UNIT 4: ELECTROMAGNETIC INDUCTION AND ALTERNATING CURRENTS</b>
	11	Electromagnetic Induction
	12	Alternating Current
		<b>UNIT 5: ELECTROMAGNETIC WAVES</b>
	13	Electromagnetic Waves
		<b>UNIT 6: OPTICS</b>
	14	Spherical Mirrors

	15	Refraction of Light at a Plane Interface: Total internal Reflection: Optical Fibre
	16	Refraction of Light at Spherical Surfaces: Lenses
	17	Refraction and Dispersion of Light through a Prism
	18	Optical Instruments
September	19	Wave nature of Light: Huygens' Principle
	20	Interference of Light
	21	Diffraction of Light
	22	Polarisation of Light
		<b>UNIT 7: DUAL NATURE OF RADIATION AND MATTER</b>
	23	Photo electric Effect
	24	Matter Waves
	25	X-rays
		<b>UNIT 8: ATOMS AND NUCLEI</b>
	26	Atom, Origin of Spectra: Bohr's Theory of Hydrogen Atom
	27	Nuclear Structure
	28	Radioactivity
October-November	29	Mass-Energy Equivalence: Nuclear Binding Energy
	30	Nuclear Fission and Nuclear Fusion: Sources of Energy
		<b>UNIT 9: ELECTRONIC DEVICES</b>
	31	Semiconductor Electronics
	32	Junction Diodes
	33	Junction Transistors
	34	Logic Gates
		<b>UNIT 10: COMMUNICATION SYSTEMS</b>
	35	Communication Systems
		<b>REVISION</b>
<b>November-December</b>		<b>SECOND COMPARATIVE EXAMINATION / FIRST PRE-BOARD EXAMINATION</b>
<b>January</b>		<b>SECOND PRE-BOARD EXAMINATION</b>
<b>January-February</b>		<b>THIRD PRE-BOARD EXAMINATION</b>

**LIST OF PRACTICALS**  
(According to ISC 2022 Syllabus)

Month	Expt. No.	Experiment
April	1	Using a metre bridge, determine the resistance of about 100 cm of (constantan) wire. Measure its length and radius and hence, calculate the specific resistance of the material.
	2	Verify Ohm's law for the given unknown resistance (a 60 cm constantan wire), plotting a graph of potential difference versus current. Also calculate the resistance per cm of the wire from the slope of the graph and the length of the wire.
May	3	To compare emfs of two cells using a potentiometer.
	4	To determine the internal resistance of a cell by a potentiometer.
July	5	From a potentiometer set up, measure the fall in potential (i.e. pd) for increasing lengths of a constantan wire, through which a steady current is flowing; plot a graph of pd (V) versus length (l). Calculate the potential gradient of the wire and specific resistance of its material. Q (i) Why is the current kept constant in this experiment? Q (ii) How can you increase the sensitivity of the potentiometer? Q (iii) How can you use the above results and measure the emf of a cell?
	6	To verify the laws of combination of resistances (series and parallel) using metre bridge.
August	7	To find focal length of a convex lens by using u-v method (no parallax method) Using a convex lens, optical bench/metre scales and two pins, obtain the positions of the images for various positions of the object; $f < u < 2f$ , $u \sim 2f$ and $u > 2f$ . Draw the following set of graphs using data from this experiments - (i) v against u. It will be a curve. (ii) Magnification $m = \left(\frac{v}{u}\right)$ against v which is a straight line and to find focal length by intercept (iii) $y = (100/v)$ against $x = (100/u)$ which is a straight line and find f by intercepts.
September	8	To find f of a convex lens by displacement method.
October	9	To determine the focal length of a given convex lens with the help of an auxiliary convex lens.
	10	To determine the focal length of a concave lens, using an auxiliary convex lens, not in contact and plotting

		appropriate graph.
		<b>Practical examination (on ISC Board pattern)</b>
November	11	To determine focal length of concave mirror by using two pins (by u-v method).
	12	To determine the refractive index of a liquid by using a convex lens and a plane mirror.
December	13	To determine the focal length of a convex mirror using convex lens.
January		<b>Practical Examination (on ISC Board pattern)</b>

**Demonstration Experiments (The following experiments are to be demonstrated by the teacher):**

1. To convert a given galvanometer into (a) an ammeter of range, say 2A and (b) a voltmeter of range 4V.
2. To study I-V characteristics of a semi-conductor diode in forward and reverse bias.
3. To study characteristics of a Zener diode and to determine its reverse breakdown voltage.
4. To study the characteristics of pnp/npn transistor in common emitter configuration.
5. To determine refractive index of a glass slab using a travelling microscope.
6. To observe polarisation of light using two polaroids.
7. Identification of diode, LED, transistor, IC, resistor, capacitor from mixed collection of such items.
8. Use of multimeter to (i) identify base of transistor, (ii) distinguish between n-p-n and p-n-p type transistors, (iii) see the unidirectional flow of current in case of diode and an LED, (iv) check whether a given electronic component (e.g. diode, transistors, IC) is in working order.
9. Charging and discharging of a capacitor.

**The following guidelines are applicable for the Council's examination 2022.**

There will be two papers in the subject.

**Paper I:** Theory – three hours ... 70 marks

**Paper II:** Practical – three hours ... 15 marks

Project work: 10 marks

Practical File: 5 marks

**Project work – 10 marks**

The project work is to be assessed by a Visiting Examiner appointed locally and approved by the Council.

All candidates will do project work involving some physics related topics, under the guidance and regular supervision of the Physics teacher.

Candidates are to prepare a technical report formally written, including an abstract, some theoretical discussion, experimental setup, observations with tables of data collected, analysis and discussion of results, deductions, conclusion, etc. (after the draft has been approved by the teacher). The report should be kept simple, but neat and elegant. No extra credit shall be given for type-written material/decorative cover, etc. Teachers may assign or students may choose any one project of their choice.

**Practical File – 5 marks**

The visiting examiner is required to assess students on the basis of the Physics practical file maintained by them during the academic year

**Note: For further details please refer to the Council's syllabus for ISC examination 2022.**

**CHEMISTRY**

**Name of the Textbook: Nootan ISC Chemistry For Class XII**  
**Author: Dr. H C Srivastava**  
**Publisher: Nageen Prakashan**

Suggested Month	Topic Number	Name of the Chapter
April-May	1	Solid State
	2	Solutions
	9	Coordination Compounds
	8	Compounds – $K_2Cr_2O_7$ and $KMnO_4$
	10	Haloalkanes and Haloarenes
	11	Alcohols, Phenols and Ethers
July	<b>FIRST COMPARATIVE EXAMINATION</b>	
July – August	4	Chemical Kinetics
	5	Surface Chemistry
	7	p-Block Elements
	8	d and f Block Elements
September-October	12	Aldehydes, Ketones and Carboxylic Acids
	6	General Principles and Processes of Isolation of Elements
	14	Biomolecules
	3	Electrochemistry
	13	Organic Compounds containing Nitrogen

November	15	Polymers
	16	Chemistry in Everyday Life
		<b>REVISION</b>
<b>November-December</b>	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>	
<b>January</b>	<b>SECOND PRE BOARD EXAMINATION</b>	
<b>January-February</b>	<b>THIRD PRE BOARD EXAMINATION</b>	

**PRACTICALS**

S. No.	LIST OF PRACTICALS
	<b>July to October</b>
1	Qualitative Analysis
2	Study of the rate of reaction
3	Electrochemistry
4	Project work
5	Titrations
	<b>November to December</b>
6	Identification of Organic compounds and functional groups
7	Characteristic tests of carbohydrates and proteins
8	Experiments related to pH change using pH paper or universal indicator

**Note:**

There will be **two** papers in the subject.

**Paper I (Theory):** Three hours (70 marks)

**Paper II (Practical):** Three hours (15 marks), project work (10 marks) and practical file (5 marks)

**Paper I (Theory) 70 marks**

There will be no overall choice in the paper. Candidates will be required to answer **all** questions.

Internal choice will be available in two questions of 2 marks each, two questions of 3 marks each and all the three questions of 5 marks each.

Total unit wise weightage will be as follows:

Physical Chemistry	:	25 Marks
Inorganic Chemistry	:	20 Marks
Organic Chemistry	:	<u>25 Marks</u>
Total	:	<b>70 Marks</b>

**Paper II (Practical):**

- **Practical (15 marks)**
- **Project Work (10 marks):** The candidate is to creatively execute one project / assignment on a selected topic of Chemistry. Teachers may assign or students may choose any one project of their choice.

**Practical File (5 marks):** Teachers are required to assess students on the basis of the Chemistry Practical file maintained by them during the academic year.

**Refer to the Council Syllabus 2022 for details.**

## BIOLOGY

**Name of the Textbook: Nootan ISC Biology for Class XII**  
**Author: Prof V Singh and Dr D K Jain**  
**Publisher: Nageen Prakashan (Pvt) Ltd**

Suggested Month	Chapter Number	Name of the Chapter
April	3	Human Reproduction
	4	Reproductive Health
	6	Molecular Basis of Inheritance
May	13	Principles and Processes of Biotechnology
	17	Biodiversity and its Conservation
<b>July</b>	<b>FIRST COMPARATIVE EXAMINATION</b>	
July	2	Sexual Reproduction in Flowering Plants
	5	Principles of Inheritance and Variation
	10	Human Health and Diseases
August	11	Strategies for Enhancement in Food Production
	12	Microbes in Human Welfare
	14	Biotechnology and its Applications
	15	Organisms and Populations
September	7	Origin of Life
	8	Evidences and Theories of Biological Evolution
	9	Human Evolution
October- November	1	Reproduction in Organisms
	16	Ecosystem
	18	Environmental Issues
		<b>REVISION</b>
<b>November</b>	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>	

<b>December</b>	
<b>January</b>	<b>SECOND PRE BOARD EXAMINATION</b>
<b>January- February</b>	<b>THIRD PRE BOARD EXAMINATION</b>

### LIST OF PRACTICALS

1.	<p><b>Taxonomy</b></p> <p>(i) Family Malvaceae – type – China rose / Hollyhock.</p> <p>(ii) Family Leguminosae – subfamily – Papilionaceae – type – Sweet pea / Pea / Bean / <i>Sesbania</i> / <i>Clitoria</i> (single flower).</p> <p>(iii) Family Solanaceae – type – <i>Petunia</i> / <i>Datura</i> / Brinjal flower / <i>Solanum nigrum</i>.</p> <p>(iv) Family Liliaceae – type – Onion / Amaryllidaceae – type – Lily/ Spider lily / Tiger lily / Tube rose / <i>Gladiolus</i>.</p>
2.	<p><b>Experiments</b></p> <p>(i) Study of arrangement/distribution of stomata in dicot and monocot leaves.</p> <p>(ii) Study of soils from two different sites</p> <p>(iii) Study the effect of enzyme (amylase) action at three different temperatures and pH on starch solution.</p> <p>(iv) Isolation of DNA from available plant material.</p>
3.	<p><b>Slide preparation</b></p> <p>(i) Germination of pollen grain in a nutrient medium.</p> <p>(ii) T.S. of ovary of a flower (marginal/axile placentation)</p> <p>(iii) T.S. of a hydrophyte stem</p> <p>(iv) T.S. of a xerophytic leaf (<i>Nerium</i>)</p> <p>(v) L.S. of monocot and dicot seed</p>
4.	<p><b>Spotting</b></p> <p>(i) Identify and comment on the following:</p> <p>(a) T.S. of ovary of mammal</p> <p>(b) T.S. of testis of mammal</p> <p>(c) Germinating pollen grain</p> <p>(d) T.S. of ovary to show the types of placentation. (marginal, axile, basal (LS), parietal)</p> <p>(e) T.S. of blastula / blastocyst of a mammal</p> <p>(f) <i>Plasmodium</i> sporozoite (whole mount)</p> <p>(g) <i>Entamoeba histolytica</i> trophozoite (whole mount).</p> <p>(h) Specimen of <i>Ascaris</i>.</p> <p>(ii) Comment upon ecological adaptations of plants and animals.</p> <p>(iii) Flowers adapted to pollination by different agencies – insect and wind.</p>

There will be **two** papers in the subject.

**Paper I Theory:** (Three hours) ... 70 marks

**Paper II Practical:** (Three hours) ... 15 marks, Project work: (10 marks),  
 Practical File: (5 marks)

**Paper I:** Theory (70 marks): There will be one paper of three hours duration. There will be no overall choice in the paper. Candidates will be required to answer all questions. Internal choice will be available in two questions of 2 marks each, two questions of 3 marks each and all the three questions of 5 marks each.

S.No.	UNIT	TOTAL WEIGTAGE
1.	Reproduction	16 Marks
2.	Genetics and Evolution	15 Marks
3.	Biology and Human Welfare	14 Marks
4.	Biotechnology and its Application	10 Marks
5.	Ecology and Environment	15 Marks
	<b>Total</b>	<b>70 Marks</b>

Please refer to the Council Syllabus 2022 for details.

## COMPUTER SCIENCE

**Name of the Textbook:** Computer Science with Java A Textbook for Class XII

**Author:** Sumita Arora  
**Publisher:** Dhanpat Rai & Co.

Suggested Month	Chapter No	Name of the Chapter
April-May	1	Boolean Algebra (including K-Map)
	2	Computer Hardware (up to Adders)
	3	Objects and Classes (Revision)
	5	Primitive Values, Types Casting and Expressions (Revision)
	6	Statements, Control Structures and Scope (Revision)
	7	Functions / Methods (Revision)
	8	Arrays and Strings (Revision)
	9	Compiling and Running Java Programs (Revision)
	10	Java Classes: An OOP Perspective (Revision)
<b>July</b>	<b>FIRST COMPARATIVE EXAMINATION</b>	
August	4	Java Revision Tour

		(Exception Handling and File Handling)
	2	Application of Logic Gates (remaining part of the chapter)
	8	Memory Address Calculation
September	12	Concept of Inheritance
	11	Recursion (including merge sort and quick sort)
October	-	Passing of Objects (programs)
	13	Simple Data Structures Infix, Postfix, Prefix notations
November	14	Recursive Data Structures (Linked Lists and Trees)
	15	Computational Complexity
		<b>REVISION</b>
<b>November - December</b>	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>	
<b>January</b>	<b>SECOND PRE-BOARD EXAMINATION</b>	
<b>January - February</b>	<b>THIRD PRE-BOARD EXAMINATION</b>	

Please refer to the Council syllabus 2022.

There will be two papers in the subject:

**Paper 1:** Theory (three hours) ... 70 marks

**Paper 2:** Practical (three hours) ... 30 marks

**Paper 1:** (Theory) Paper 1 will be of three hours duration and be divided into two parts.

**Part 1:** (20 marks) this part will consist of compulsory short answer questions, testing knowledge, application and skills relating to the entire syllabus.

**Part 2:** (50 marks) this part will be divided into **three** sections A, B and C. Candidates are required to answer **two** questions out of **three** from Section A (each carrying 10 marks) and **two** questions out of **three** from Section B (each carrying 10 marks) and **two** questions out of **three** from Section C (each carrying 5 marks). Therefore, a total of **six** questions are to be answered in Part II.

**Note:** Algorithms may be done along with the programs.

## GEOGRAPHY

Name of the Textbook: ISC Geography Part II (Class 12)  
Author: D R Kullar  
Publisher: Kalyani

Suggested Month	Topic Number	Name of the Chapter	Topic Number
April-May	1	<b>Unit 1</b> Locational Setting of India (Map Work)	5
	2	Geological Evolution and Structure	14
	6	Natural Vegetation (Map Work)	103
	7	<b>Unit 2</b> Population (Map Work)	119
	8	Migration trends	146
	9	Demographic Attributes	157
	12	<b>Unit 3</b> Environmental Management and Land Use pattern	225
	13	Water Resources and types of Irrigation	235
	20	<b>Unit 5</b> Regional Economic Development (Case Studies) (Map Work)	489
July	<b>FIRST COMPARATIVE EXAMINATION</b>		
July	3	<b>Unit 1</b> Relief	22
	4	Drainage	46
	5	Climate	59
		<b>Map Work</b>	
August - September	10	<b>Unit 2</b> Rural settlements	179
	11	Urban settlements	192
	14	<b>Unit 3</b> Agriculture	268
	15	Fisheries	319
	16	Minerals and Power Resources	334
	17	<b>Unit 4</b> Transport and Communication	367
		<b>Map Work</b>	
October	18	Industries	409
	19	Tourism Industries	472
		<b>Map Work</b>	

	Practical Work (as per the Council syllabus)
November	REVISION
November - December	SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)
January	SECOND PRE-BOARD EXAMINATION
January - February	THIRD PRE-BOARD EXAMINATION

Practical work: 10 marks  
Project work: 10 marks  
Viva: 10 marks  
Theory: 70 marks

There will be one theory paper of **three** hours divided into two parts –

**Part I ( 30 marks )** will be **compulsory** and will consist of Section A and Section B.

**Section A** will include **compulsory** short answer questions testing knowledge, application and skills related to elementary / fundamental of the entire syllabus.

**Section B** will consist of one question on **map work**.

**Part II ( 40 marks )** will consist of **seven** questions. Candidates will be required to answer **four** out of **seven** questions. Each question in this part shall carry 10 marks

Please refer to the Council Syllabus 2022 for details.

Note: For First Comparative Examination:  
Four questions unitwise rest mixed questions

## BIOTECHNOLOGY

Name of the Textbook: A Textbook of Biotechnology (Revised)  
Author: Dr R C Dubey  
Publisher: S Chand & Company Pvt Ltd

Suggested Month	Topic Number	Name of the Topic
April-May	1	<b>Molecular Biology</b>
	(i)	Nucleic Acids
	(ii)	Protein Synthesis
	(iii)	Gene Regulation in Prokaryotes
	2	<b>Genetic Engineering</b>
	(i)	Introduction to Gene Cloning and Genetic Engineering



July	FIRST COMPARATIVE EXAMINATION	
July	2 (iii)	Gene Analysis Techniques
August	3	<b>Cell Culture Technology</b>
	(i)	General Tools and Techniques used in Cell Culture Technology
	(ii)	Microbial Culture and its Application
September	3 (iii)	Plant Tissue Culture and its Application
October- November	3 (iv)	Animal Cell Culture and its Application
	2 (ii)	Innovations in Biotechnology
	4	<b>Bioinformatics</b>
	(i)	Introduction to Bioinformatics
	(ii)	Genomics
	(iii)	Proteomics
		<b>REVISION</b>
<b>November- December</b>	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>	
<b>January</b>	<b>SECOND PRE BOARD EXAMINATION</b>	
<b>January- February</b>	<b>THIRD PRE BOARD EXAMINATION</b>	

### LIST OF PRACTICALS

1	Paper Chromatography
2	Preparation of buffers
3	Preparation of culture media
4	Sterilization of Culture medium and other materials
5	Preparation of various forms of culture media – Petri plate, Slant and Suspension
6	Inoculation and Incubation of <i>Lactobacillus</i> on the culture medium in the Petri plate
7	Identification of bacteria by Gram +ve and Gram –ve (from curd / saliva / soil solution)
8	Action on Enzyme on starch under (i) variable temperature (ii) variable substrate concentration – plotting of Km value by graph
9	Isolation of DNA from plants
10	DNA estimation by colorimeter by DPA method
11	Protein estimation by colour reaction – Bradford test
12	Cell viability test by Evan's blue dye
13	Isolation of Milk protein – wet weight and dry weight
14	Chromatography to find adulteration in spices by using mixture of Turmeric and metanil yellow.

15	Demonstration of cell counting by Haemocytometer by using diluted blood.
16	Experiment to show the process of saponification.

There will be two papers in the subject.

**Paper I Theory:** (Three hours) ... 70 marks

**Paper II Practical:** (Three hours) ... 15 marks, Project Work: 10 marks, Practical File: 5 marks

**Paper I:** Theory (70 marks) there will be **one** paper of **three** hours duration divided into **two** parts.

**Part I (20 marks)** will consist of compulsory short answer questions, testing knowledge, application and skills relating to elementary/fundamental aspects of the entire syllabus.

**Part II (50 marks)** will consist of **eight** questions out of which the candidates will be required to answer **five** questions. Each question in this part shall carry 10 marks.

Please refer to the Council Syllabus 2022 for details.

### PHYSICAL EDUCATION

**Name of the Textbook:** Saraswati Physical Education for Class XII (ISC)

**Author:** Dr V K Sharma

**Publisher:** New Saraswati House (India) Pvt. Ltd.

Suggested Month	Chapter Number	Name of the Chapter	Page
April-May	1	Sociological Aspects of Physical Education	17
	3	Career Aspects in Physical Education	46
April –May		<b>Any two games of your choice:</b> Cricket, Football, Hockey, Basketball, Volleyball, Badminton, Tennis, Swimming, Athletics	
		<b>Practical Assessment</b>	
		<b>Physical Efficiency Tests</b>	
July	<b>FIRST COMPARATIVE EXAMINATION</b>		
July- August	5	Health Education and Health Problems	93
	6	Sports Injuries and First-Aid	135
September	4	Competitions and Tournaments	63

October	2	Training Methods	26
November		<b>REVISION</b>	
July – October		<b>Any two games of your choice:</b> Cricket, Football, Hockey, Basketball, Volleyball, Badminton, Tennis, Swimming, Athletics	
		<b>Practical Assessment</b>	
		<b>Physical Efficiency Tests</b>	
November		<b>REVISION</b>	
November-December		<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE-BOARD EXAMINATION)</b>	
January		<b>SECOND PRE-BOARD EXAMINATION</b>	
January-February		<b>THIRD PRE-BOARD EXAMINATION</b>	

There will be **two** papers in the subject.

**Paper I:** Theory: 3 hours ... 70 marks;

**Paper II:** Practical Work ... 30 marks

**Paper I (Theory) ... 70 marks**

The theory paper will be divided into **two** Sections A and B. Candidates will be required to answer **five** questions out of **seven** from **Section A**, each carrying **8 marks**. **Section B** will be based on questions on major games in the syllabus. Candidates will be required to select **two games** from this section and answer any **three** of the **five** subparts (a), (b), (c), (d) and (e) from **each** of the **two** selected games of their choice. Each subpart shall carry **5 marks**.

**Paper II (Internal + External Assessment) ... 30 marks**

Internal Assessment work will be assessed in two parts as follows:

- (i) Continuous Assessment
- (ii) Practical Assessment (*by the Internal Examiner*)

The Practical Assessment will consist of the following:

- A. Physical Efficiency Tests
- B. Specialisation Test
- C. Viva (on the two games / activities chosen by the candidate)

\* **Please refer to the Council Syllabus 2022 for the Syllabus details and Council Syllabus 2018 for the pattern of the question paper.**

\* **Practical Assessment is to be done by the Internal Examiner for both the terms.**

## ART (871)

**Name of the Drawing Book:** 1. Still Life by Sanjay Shelar  
2. Alankar Part 5 by Chaman Kiran  
**Publisher:** 1. Jyotsana  
2. Nageen Prakashan

Suggested Months	Chapter Number	Name of the Chapter
April-May Still Life (Paper I)	1	A group of kitchen utensils i.e. cooker etc. 4 Pickling session i.e. Mangoes, spices etc. 5A basket full of vegetables / fruits i.e. carrot, Apple etc.
Original Imagination	2	Illustrate a scene of your school library Family picnic scene
Craft 'A'	3	Design a logo for a bakery
	4	Pattern design – design a pattern for a hand bag of a college girl.
	5	Story book cover and inside pages.
<b>July</b>	<b>FIRST COMPARATIVE EXAMINATION</b>	
July Still Life Paper I	6 7	Group of Snacks items, Chips, Burger etc A set of soft drinks – i.e. Tropicana, Appy fiz, glass, ice cubes, tongs etc.
Original Imagination	8 9	Draw a scene of a railway station Bus Stop scene
'Craft A'	10	Book cover- Design a front cover of your Daily Journal
	11	Poster design – Independence Day
August-October Still Life I	12 13	Group of breakfast items i.e. Sandwich, Milk etc. Group of objects from Temple, Pooja items
Original Imagination	14 15	Children playing on street Living room scene – Family watching television
Craft 'A'	16 17 18	Design a Festival card Poster Design – Annual Sport Day Poster Logo design – go green / save water
November-December	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE-BOARD EXAMINATION)</b>	
January	<b>SECOND PRE-BOARD EXAMINATION</b>	
January-February	<b>THIRD PRE-BOARD EXAMINATION</b>	

**Note: Please refer to the Council Syllabus 2022 for further details.**

## SOCIOLOGY

Name of the Textbook: **ISC Sociology for Class XII**  
Publisher: **Kalyani Publisher**

Suggested Month	Chapter Number	Name of the Chapter
April - May	1	Social Institution
	2	Religion and Society
	3	Political Organisation
July	<b>FIRST COMPARATIVE EXAMINATION</b>	
July - August	4	Economic Organisation
	5	Tribal India – Past, Present & Future
	6	Social Stratification
	-	Submission of 1 <sup>st</sup> Project
September-October	7	Social Change & Development,
		Submission of 2 <sup>nd</sup> Project
November	<b>REVISION</b>	
November-December	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>	
January	<b>SECOND PRE BOARD EXAMINATION</b>	
January-February	<b>THIRD PRE BOARD EXAMINATION</b>	

**Note: Please refer to the Council Syllabus 2022 for further details.**

There will be **two** papers in the subject:

**Paper I** – Theory: 3 hours ... 70 marks

**Part II** – Practical Work ... 30 marks

### PAPER – I (THEORY) – 70 marks

**Part I (20 marks)** will consist of **compulsory** short answer questions testing knowledge, application and skills relating to elementary / fundamental aspects of the entire syllabus.

**Part II (50 marks)** will consist of **eight** questions out of which the candidate will be required to answer **five** questions, each carrying **10 marks**.

## FASHION DESIGNING CLASS XII

Name of the textbook: **Course of Fashion Design – Study Content Class XII**  
Author: **Mrs Shipra Anand**  
Publisher: **Self Published by the Author**

Suggested Month	Chapter Number	Name of the Chapter
April - May		<b>TEXTILES</b>
	<b>1</b>	<b>Introduction to Textiles</b>
	(A)	Definitions – Textiles, Fibre, Yarn, Fabric, Finish and their qualities
	(B)	Introduction to Textile Industry
	<b>2</b>	<b>Textile Fibres</b>
	2(A)	Types of Fibres
	2(B)	Classification of Fibres
	(i)	Natural Fibres
	(ii)	Manufactured Fibres
		<b>FASHION AND APPAREL</b>
	<b>6</b>	<b>History of Fashion in Europe: 1901-1950</b>
	6(A)	1901-1920 Edwardian period / Labelle Epoque / WW1
		<b>Textiles</b>
June	2(C)	Fibre Properties
		<b>FASHION AND APPAREL</b>
	6(B)	1941-1950 Frugal Period
	<b>7</b>	<b>History of Fashion in Europe : 1961 till date</b>
	7(A)	1961-1970 : Swinging 60's / Hippies
July	<b>FIRST COMPARATIVE EXAMINATION</b>	

Suggested Month	Chapter Number	Name of the Chapter
July- August		<b>TEXTILES</b>
	<b>3</b>	<b>Yarn</b>
	3(A)	Yarn Formation
	3(B)	Yarn Twist
	3(C)	Blends
	<b>4.</b>	<b>Fabric Construction Techniques</b>
	4(A)	Weaving

		<b>FASHION AND APPAREL</b>
	7(B)	1971-1980: Disco decade / Punk period
	7(C)	2001 – Till date
August - September		<b>TEXTILES</b>
	4(B)	Other Fabric Constructions
	4(C)	Non-Woven
	<b>5</b>	<b>Textiles In India</b>
	5(A)	Significance of Colours
	5(B)	Indigenous dyes
October – November	5(C)	Indian Textiles
	5(D)	Drapes
		<b>FASHION AND APPAREL</b>
	<b>8</b>	<b>Traditional Costumes of Women in India</b>
	<b>9</b>	<b>Traditional Costumes of Men in India</b>
		<b>REVISION</b>
November-December		<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE BOARD EXAMINATION)</b>
January		<b>SECOND PRE BOARD EXAMINATION</b>
January-February		<b>THIRD PRE BOARD EXAMINATION</b>

#### LIST OF PRACTICALS

Suggested month	Practical No.	Topics
April & May	1.	Fabric Swatches
	2.	Fibre Identification (12)
May & June	3.	Macrame Knots (10)
	4.	Leaf and Vegetable printing (3)
July	5.	Basic Weaves (9)
August	6.	Tie & Dye (16)

October	7.	Renovation and Repair, Darning & Patchwork
	8.	Laundering & Finishing of Textiles
	9.	Newspaper clippings of Textile invention & Developments during current academic year.

There will be 2 papers in the subject.

**Paper I – Theory: 3 hours – (70 Marks)**

Answer any **five** questions (choosing at least **two** from Section A and **two** from Section B) out of 8 questions.

**Paper 2: Practical (30 marks)**

File : 10 marks

Practical : 20 marks

**Note: Please refer to the Council Syllabus 2022 for further details.**

#### POLITICAL SCIENCE

**Name of the Textbook: ISC Political Science - XII**

**Author: K K Ghai**

**Publisher: Kalyani**

Suggested Month	Chapter Number	Name of the Chapter
April-May	1	Forms of Government: Totalitarian, Authoritarian and Liberal Democratic States
	2	Forms of Government: Unitary and Federal States
	3	Forms of Government: Parliamentary and Presidential Governments
	6	Organs of Government: The Legislature
	13	Local Self Government
	14	Democracy in India- A Perspective of Challenges Faced
July	-	<b>FIRST COMPARATIVE EXAMINATION</b>
July- October	4	Constitution
	7	Organs of Government: The Executive

	8	Organs of Government: Judiciary	
	9	Constitution of India: The Preamble	
	10	Indian Constitution: Salient Features of Indian Constitution	
	11	Fundamental Rights	
	12	Directive Principles of State Policy	
	5	Franchise and Representation	
November-December	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE-BOARD EXAMINATION)</b>		
January	<b>SECOND PRE-BOARD EXAMINATION</b>		
January-February	<b>THIRD PRE-BOARD EXAMINATION</b>		

**Note:**

There will be **two** papers in the subject.

**Paper I:** Theory – **3 hours** (80 marks)

Part I: (**20 marks**) will consist of compulsory short answer questions from the entire syllabus.

Part II: (**60 marks**) will be divided into **two sections A and B**. Candidates will be required to answer three questions out of five from **Section A** and two questions out of three from **Section B**. Each question carries **12 marks**.

**Paper II:** Project Work: (20 marks) ONLY ONE.

**Please refer to the Council Syllabus 2022 for details.**

**LEGAL STUDIES**

Suggested Month	Chapter Number	Name of the Chapter	Page
April-May	Unit 2	Dispute Resolution and ADR	
	Unit 3	Criminal Procedure Code	
	Unit 4	Transfer of Property Act	
<b>July</b>	<b>FIRST COMPARATIVE EXAMINATION</b>		
July-November	Unit 1	Intellectual Property Law	
	Unit 5	Legal Services Authority	

	Unit 7	Important Laws	
	Unit 6	Legal Maxims	
	Unit 2	National Green Tribunal and Green Nyayalay	
	Unit 3	Evidence Act	
	Unit 4	Will Act, Trust Act and Benami Transaction Act, Gram Nyayalay	
November-December	<b>SECOND COMPARATIVE EXAMINATION (FIRST PRE-BOARD EXAMINATION)</b>		
January	<b>SECOND PRE-BOARD EXAMINATION</b>		
January-February	<b>THIRD PRE-BOARD EXAMINATION</b>		

**Note: Please refer to the Council Syllabus 2022 for further details.**

There will be **two** papers in the subject:

**Paper I** – Theory: 3 hours – 70 marks

**Paper II** – Project Work: – 30 marks

**Paper I (THEORY) – 70 marks**

**Part I (20 marks)** will consist of compulsory short answer questions covering the entire syllabus.

**Part II (50 marks)** will consist of **eight** questions out of which the candidate will be required to answer **five** questions, each carrying 10 marks.