

*He who has imagination without learning has wings but no feet.  
– Joseph Joubert*

Class XI

# City Montessori School, Lucknow

## Syllabus 2010-2011

### Class XI

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**NOTE: Please refer to ISC Council Syllabus and Scope of Syllabus 2012 for further reference.**

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## 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.

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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.
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.

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**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.

**MATHEMATICS:**

1. To enable candidates to acquire knowledge and to develop an understanding of the terms, concepts, symbols, definitions, principles, processes and formulae 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 –
  - computation
  - drawing geometrical figures and graphs
  - 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 a scientific attitude 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, facts, processes and principles.
2. To develop the ability to apply the knowledge of contents and principles in new and unfamiliar situations.
3. To develop skills in proper handling of chemicals and apparatus.
4. To develop an ability to appreciate achievements and its role in nature and society.

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- To develop an interest in activities involving the usage of the knowledge of chemistry.

**BIOLOGY:**

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

**COMPUTER SCIENCE:**

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

**BIOTECHNOLOGY:**

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

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**ENVIRONMENTAL EDUCATION:**

- To develop an in-depth understanding of various environmental issues and concerns of national and global importance.
- To develop a balanced view of the relationship between environment and development.
- To understand basic concepts related to sustainable development vis-a-vis improvement of quality of life.
- To develop a deeper concern for the environment and the sense of commitment and responsibility to take proactive action.
- To appreciate the variety in living organisms and recognise India as a mega-diversity nation.
- To appreciate the role of the individual, community, national and international agencies in resolving the environmental problems.

**MORAL EDUCATION**

**Name of the Textbook: Student's Handbook For Spiritual Education**

**Publisher: CMS Publication**

I Term July - September			
Suggested Month	Chapter Number	Name of the Chapter	
	Sec 'C'	Students's Hand Book for Spiritual Education	
July	Chapter 1	• Introduction	59-63
August – September	Chapter 2	• The Extended Family	64-69
Note: All written work to be done in the prescribed book only.			

II Term October - February			
Suggested Month	Chapter Number	Name of the Chapter	
November – December	3	• Managing one's affairs and responsibilities with rectitude of conduct.	70-76
January		• Revision of Sec A and B (Oral)	
Note: Sec D – page 83 six pillars of character development – for prayer assembly.			

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## ENGLISH LANGUAGE

\* English Language test papers to be prescribed by the subject teacher at the branch level.

JULY – FEBRUARY	
Question No.	Topics
<b>1.</b>	<b>Composition:</b>
a	narrative
b	descriptive
c	reflective
d	imaginative
e	abstract / exposition
f	argumentative
g	story writing
<b>2.</b>	<b>Report Writing:</b>
	- an accident
	- a natural calamity
	- coverage of an official function
	- visit of a dignitary
	- an article
	- an incident
	- F.I.R.
	- any other topic
	<b>Review Writing on:</b>
	- a film
	- a book
	- a testimonial
	- curriculum vitae
	- any other topic
<b>3.</b>	<b>Functional Grammar:</b>
a.	transformation of sentences
b.	prepositions
c.	tenses
<b>4.</b>	<b>Comprehension:</b>
a (i)	similar meaning sentences
(ii)	different meaning sentences
(iii)	two line explanation
b.	comprehension questions
c.	precis writing
<b>REVISION / HALF-YEARLY EXAMINATION (October)</b>	
<b>REVISION / ANNUAL EXAMINATION (February)</b>	

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(* One Test Paper to be done every month)
(** October and November to be considered as one month i.e. only one test paper to be done in both the months.)

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

**Internal assessment: ... 20 Marks**

**Question 1** – A composition on one of a number of subjects.  
(450-500 words) ... **20 marks**

**Question 2** – A short composition based on the information and ideas provided.  
(300 words) ... **15 marks**

**Question 3** – Short-answer questions to test grammar, structure and usage. ... **20 marks**

**Question 4** – Comprehension (about 500 words will be provided) ... **25 marks.**

**Please note: Refer to the Council Syllabus 2012.**

## ENGLISH (Prescribed Texts)

<b>Name of the Textbook:</b>	1. Pygmalion / Macbeth
	2. Footprints
	3. Hues
	4. Starlight
<b>Author:</b>	1. Bernard Shaw / Shakespeare
	2. Ed. by Stephen DaCosta
	3. Anupam Bannerjee, Barry Antunis, S. Thomas, Sumana Saha
	4. Ed. by Guy Kenneth Dantes
<b>Publisher:</b>	1. Orient Longman / OUP
	2. Evergreen
	3. Macmillan
	4. Orient Black Swan

JULY - SEPTEMBER			
Suggested Month	Chapter Number	Name of the Chapter	Page
July		<b>Macbeth</b> – Act I (Scenes 1, 2, 3 and 4)	1-13
		<b>Pygmalion</b> – Act I, Act II	7-19, 20-50
		<b>Starlight</b>	
	8	Ode on a Grecian Urn	39
		<b>Hues</b>	

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	3	The Portrait of a Lady	24
	4	Growing Up	30
		<b>Footprints</b>	
	2	On Saying "Please"	9
August		<b>Macbeth</b> – Act I (Scenes 5, 6 and 7)	13-22
		<b>Pygmalion</b> – Act II (cont.)	20-50
		<b>Starlight</b>	
	7	Ode to the West Wind	35
	19	Telephone Conversation	76
		<b>Hues</b>	
	5	The Rattrap	38
		<b>Footprints</b>	
	5	A Bachelor's Complaint of the Behaviour of Married People	23
September		<b>Macbeth</b> – Revision	
		<b>Pygmalion</b> – Revision	
		<b>Hues</b>	
	8	A Devoted Son	67
		<b>Footprints</b>	
	6	Of Studies	31
		<b>REVISION</b>	
		<b>HALF-YEARLY EXAMINATION</b>	

<b>OCTOBER - FEBRUARY</b>			
<b>Suggested Month</b>	<b>Chapter Number</b>	<b>Name of the Chapter</b>	<b>Page</b>
October		<b>Macbeth</b> – Act II (Scenes 1 and 2)	23-29
		<b>Pygmalion</b> Act III	51-71
		<b>Starlight</b>	
	9	The Lady Of Shalott	42
		<b>Hues</b> – Revision	
		<b>Footprints</b>	
	9	Principles of Good Writing	43
November		<b>Macbeth</b> Act II (Scenes 3 and 4)	30-39
		Act III (Scenes 1, 2 and 3)	41-50
		<b>Pygmalion</b> Act III (Contd.)	51-71
		<b>Starlight</b>	

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	2	Frost at Midnight	10
	18	Anthem for Doomed Youth	74
		<b>Hues</b>	
	6	Going Places	50
		<b>Footprints</b>	
	10	Albert Einstein At School	50
December		<b>Macbeth</b>	
		<b>Act III</b> (Scenes 4, 5 and 6)	50-60
		<b>Pygmalion</b> – Act III (Contd.)	51-71
		<b>Starlight</b>	
	6	The Raven	25
	4	A Prayer for My Daughter	17
		<b>Hues</b> – Revision	
		<b>Footprints</b>	
	12	The Future is Now: A Zest for Living	62
January		<b>Macbeth</b> – Revision	51-71
		<b>Hues</b>	
	18	The Night Train at Deoli	160
	11	A Village Cricket Match	107
		<b>Starlight</b> – Revision	
		<b>Footprints</b>	
	13	What India Can Teach Us	70
	14	Environmental Crisis	77
		<b>Pygmalion</b> – Revision	
February		<b>Revision</b>	
		<b>ANNUAL EXAMINATION</b>	

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

**Internal assessment: 20 Marks**

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

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

Question 1 compulsory ... 16 marks (15+1), **four** other questions, each carrying 16 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 / alternative play, will contain **four** short passages and candidates will be required to answer questions set on

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**three** 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 / alternative play and on other prescribed texts will require essay- type answers and 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.

**Please note: Refer to the Council Syllabus 2012.**

**हिंदी**

- |                         |                     |                         |
|-------------------------|---------------------|-------------------------|
| <b>Name of Textbook</b> | <b>: Author</b>     | <b>Publication</b>      |
| 1. निर्मला              | : प्रेमचन्द         | एवरग्रीन पब्लिकेशन्स    |
| 2. कथा सुरभि            | : डा० पूरनचंद       | जनता बुक डिपॉट प्रा.लि. |
| 3. काव्य तरंग           | : आर.पी. विश्वेन्दु | एवरग्रीन पब्लिकेशन्स    |
| 4. हिंदी व्याकरण मंजूषा | : विनोदिनी शर्मा    | इण्टर यूनिवर्सिटी प्रेस |

**JULY - SEPTEMBER**

Suggested Month	Chapter Number	Name of the Chapter	Page
	काव्य तरंग		
July	1	साखी - कबीरदास	6
	3	विनय और भक्ति - सूरदास	11
	कथा सुरभि		
	1	बूढ़ी काकी - प्रेमचन्द	3
	2	मधुआ - जयशंकर प्रसाद	17
	निर्मला	अध्याय १, २, ३	5-28
	व्याकरण	निबन्ध – वर्णनात्मक	
		अपठित गद्यांश	
		वाक्य-संशोधन, मुहावरे	
August	काव्य तरंग		
	4	सच्ची मित्रता - तुलसीदास	14
	5	दोहा एकादश - रहीम	18
	कथा सुरभि		

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	3	रक्षाबंधन-विश्वभरनाथ शर्मा 'कौशिक'	27
	4	संन्यासी - सुदर्शन	41
	निर्मला	अध्याय ४, ५, ६	29 - 45
		निबन्ध – कल्पनात्मक	
September	व्याकरण	अपठित गद्यांश	
		वाक्य-संशोधन, मुहावरे	
<b>REVISION / HALF-YEARLY EXAMINATION</b>			

**OCTOBER - FEBRUARY**

Suggested Month	Chapter Number	Name of the Chapter	Page
October	काव्य तरंग		
	7	विश्व राज्य - मैथिलीशरण गुप्त	24
	10	प्रियतम - सूर्यकान्त त्रिपाठी 'निराला'	37
November	काव्य तरंग		
	8	भारत महिमा - जय शंकर प्रसाद	29
	कथा सुरभि		
	5	महाराजा का इलाज - यशपाल	59
	6	पाज़ेब-जैनेन्द्र	68
	निर्मला	अध्याय ७, ८, ९	47-68
	व्याकरण	निबन्ध – विचारात्मक निबंध	
		अपठित गद्यांश	
		वाक्य संशोधन	
		मुहावरे	
December	काव्य तरंग		
	11	मौन निमंत्रण - सुमित्रानंदन पंत	42
	13	हल्दीघाटी - सोहनलाल द्विवेदी	56
	निर्मला	अध्याय १०, ११, १२	69 - 89
		सूक्तिपरक निबंध	
		अपठित गद्यांश	
January	काव्य तरंग		
	14	सुमन के प्रति - महादेवी वर्मा	60
	कथा सुरभि		

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	7	घीसा - महादेवी वर्मा	90
	निर्मला	अध्याय १३, १४, १५	90 - 105
February	व्याकरण	निबन्ध – मुहावरे, वाक्य संशोधन	
		<b>REVISION</b>	
<b>ANNUAL EXAMINATION</b>			

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

**Section 1:** Language (**40** marks)

**Section 2:** Prescribed Textbooks (**40** marks)

**Internal Assessment:** (**20** marks)

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

**MATHEMATICS**

**Name of the textbook:** Understanding ISC  
Mathematics, Class XI

**Author:** M L Aggarwal

**Publisher:** Arya Publications

JULY - SEPTEMBER			
Suggested Month	Chapter Number	Name of the Chapter	Page
<b>Section A</b>			
July	1	Logarithms	A-1
	3	Quadratic Equations	A-29
	4	Finite and Infinite Sequences	A-74
August	6	Mathematical Induction	A-196
	2	Complex Numbers	A-14
	5	Permutations and Combinations	A-147
	8	Angles and Arc Lengths	A-256
	9	Trigonometric Functions	A-265
September	10	Compound and Multiple Angles	A-297
	11	Trigonometric Equations	A-344
<b>Section B</b>			

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	2	Vectors	B-27
<b>Section C</b>			
	1	Statistics	C-1
<b>REVISION</b>			
<b>HALF-YEARLY EXAMINATION</b>			

OCTOBER – FEBRUARY			
<b>Section A</b>			
October	12	Relations and Functions	A-361
	13	Limits and Continuity	A-408
	14	Differentiation	A-455
November	15	Applications of Derivatives	A-499
	16	Integration	A-543
	17	Cartesian System of Co-ordinates	A-566
	18	Locus and its Equation	A-585
December	19	The Straight Line	A-592
	20	Circles	A-655
	21	Statistics	A-694
January	7	Binomial Theorem	A-215
<b>Section B</b>			
	1	Three Dimensional Geometry	B-1
<b>Section C</b>			
	2	Average Due Date	C-34
February		<b>REVISION</b>	
<b>ANNUAL EXAMINATION</b>			

There will be one paper of **three** hours duration of 100 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**.

**Section A (80 marks)** will consist of 9 questions. Candidates will be required to answer **Question 1 (compulsory)** and **five** out of the rest of the **eight** questions.

**Section B / C (20 marks):** Candidates will be required to answer **two** questions out of **three** from **either Section B or Section C**.

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## PHYSICS

Name of the textbook: Nootan ISC Physics Class XI  
Author: Kumar and Mittal  
Publisher: Nageen Prakashan

JULY – SEPTEMBER		
Suggested Month	Chapter Number	Name of the Chapter
July		
	1	Role of Physics
	2	Units: Fundamental and Derived Units
	3	Error Analysis
	4	Significant Figures
	5	Dimensional Analysis
	6	Vectors
	7	Elementary Mathematics
	8	Motion in One and Two Dimensions
	9	Force: Newton's Laws of Motion
August	10	Work Power and Energy
	11	Friction
	12	Fluid Pressure
	13	Motion in Fluids: Viscosity
	14	Uniform Circular Motion
	15	Centre of Mass
	16	Rotational Motion of a Rigid Body: Moment of Inertia
September	17	Gravitation: Planets and Satellites
		<b>REVISION</b>
		<b>HALF-YEARLY EXAMINATION</b>
October / November	18	Elasticity
	19	Surface Tension
	20	Kinetic Theory of Gases
	21	Internal Energy: First Law of Thermodynamics. Specific Heat
	22	Isothermal and Adiabatic Processes

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	23	Carnot's Heat Engine: Second Law of Thermodynamics
	24	Thermal Conductivity
December	25	Thermal Radiation
	26	Simple Harmonic Motion
	27	Damped, Forced and Resonant Oscillations
	28	Progressive Harmonic Waves
	29	Wave Speeds
January	30	Superposition of Waves-1: Interference and Beats
	31	Superposition of Waves-2: Stationary (Standing) Waves :Vibrations of Air Columns.
	32	Vibrations of Stretched Strings
February	33	Doppler Effect
		<b>REVISION</b>
		<b>ANNUAL EXAMINATION</b>

### PRACTICAL WORK (According to ISC 2012 Syllabus)

The following experiments are recommended for practical work.

Suggested Month	Exp. No.	Experiments
July	1	Measurement by Vernier Callipers. Measure the diameter of a spherical body. Calculate the volume with appropriate number of significant figures. Measure the volume using a graduated cylinder and compare it with calculated value.
	2	Find the diameter of a wire using a micrometer screw gauge and determine percentage error in cross sectional area.
	3	Determine the radius of curvature of a spherical surface

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		like watch glass by a spherometer.
August	4	Equilibrium of three concurrent coplanar forces. To verify the law of parallelogram of forces and to determine the weight of a body.
	5	Inclined Plane: To find the downward force acting along the inclined plane on a roller due to gravitational pull of earth and to study its relationship with angle of inclination by plotting graph between force and $\sin\theta$ .
	6	Friction: To find the force of kinetic friction for a wooden block placed on horizontal surface and to study its relationship with normal reaction. To determine the coefficient of friction.
September	<b>HALF-YEARLY PRACTICAL EXAMINATION</b>	
October	7	Determine Young's modulus of elasticity using Searle's apparatus.
November	8	Boyle's law: To study the variation in volume with pressure for a sample of air at constant temperature by plotting graphs between P and 1/V and between P and V. (Demonstration)
December	9	Cooling curve: To study the relationship between falling temperature of a hot body (like hot water or any other liquid in a calorimeter) with time. Find the slope of curve at four different temperatures of hot body and hence deduce Newton's law of cooling.
	10	To find the acceleration due to gravity by measuring the variation in time period(T) with effective length(L) of simple pendulum, plot graph of T vs $\sqrt{L}$ and $T^2$ vs L
	11	To find the force constant of a spring and to study variation in time period of oscillation of a body suspended by the spring. To find acceleration due to gravity by plotting graph of T against $\sqrt{M}$
January	12	Oscillation of a simple meter rule used as bar pendulum. To study variation in time period (T) with distance of centre of gravity from axis of suspension and to find radius of gyration and moment of inertia about an axis through the centre of gravity. (Demonstration)
	13	To study the variation in frequency of air column with length using resonance column apparatus or a tall cylinder

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		and a set of tuning forks. Hence determine the velocity of sound in air at room temperature.
	14	To determine frequency of a tuning fork using a sonometer. (Demonstration)
February	15	To verify laws of vibration of strings using a sonometer. (Demonstration)
<b>ANNUAL PRACTICAL EXAMINATION</b>		

There will be two papers in the subject.

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

**Paper II:** Practical                      3 hours .... 20 marks

**Project Work**                              .... 07 marks

**Practical File**                              .... 03 marks

**PROJECT WORK**

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 table 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.

**Note: You are advised to refer to the Council's syllabus 2012 for further details.**

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Class XI

## CHEMISTRY

Name of the textbook: Nootan ISC Chemistry Vol 1  
Author: H C Srivastava  
Publisher: Nageen Prakashan Pvt Ltd

JULY – SEPTEMBER		
Suggested Month	Topic Number	Name of the Chapter
July	1	Atoms and Molecules
	2	Atomic Structure
	3	Periodic Table
August	4	Chemical Bonding
	11	Redox Reactions
	10	Preparation, Properties and uses of compounds of groups of 1, 2, 13, 14, 15
	12	Introduction to Organic Chemistry
September	13	Types of Chemical Reactions and their Mechanism
		<b>REVISION</b>
<b>HALF-YEARLY EXAMINATION</b>		

OCTOBER – FEBRUARY		
October	5	The Gaseous State
	6	Colloidal Solutions
November	9	Study of Representative Elements
	14	Aliphatic and Aromatic Hydrocarbons
December	7	Chemical Kinetics
	8	Chemical Equilibria
January	15	Alkyl and Aryl Halides
	16	Applications of Chemicals
February		<b>REVISION</b>
<b>ANNUAL EXAMINATION</b>		

**NOTE:** The chapter numbers are according to the Council syllabus 2012.

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## List of Practicals

1. Mixture analysis (July - September)
2. Acid-Base Titration (October - December)
3. Measurement of rate of reaction (January)
4. Construction of Voltaic cell and Daniel cell and measuring their emf. (January)

**Project Work (7 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 (3 marks):** Teachers are required to assess students on the basis of the Chemistry Practical files maintained by them during the academic year.

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

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

**Paper II (Practical):** Three hours (20 marks), project work (7 marks) and practical file (3 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 be divided into three sections A, B and C. Candidates are required to answer two out of three questions from Section A (each carrying 10 marks), two out of three questions from Section B (each carrying 5 marks) and two out of three questions from Section C (each carrying 10 marks). Therefore, a total of six questions are to be answered in part II.

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Class XI

## BIOLOGY

Name of the textbook: Nootan ISC Biology Class XI  
Author: Prof V Singh & Dr D K Jain  
Publisher: Nageen Prakashan

JULY - SEPTEMBER			
Suggested Month	Chapter Number	Name of the Chapter	Page
July	1	Nature, Scope, Tools and Scientific Methods in Biology	3
	2	Being Alive – What does it mean?	33
	8	Morphology of Root, Stem and Leaves	181
	12	Species and Population	305
	13	Biotic Community	325
	14	Ecosystem	347
	15	Biomolecules	377
August	16	Enzymes	415
	17	Cell Membranes	429
	18	The Cell as a Unit of Life	445
	19	Structural Organisation of the Cell	455
	20	Cellular Respiration	479
September	21	Cell Reproduction: Cell Cycle	499
	28	Animal Husbandry	633
	29	Plant Diseases	649
	22	Elements of Heredity and Variation	517
		<b>REVISION</b>	
		<b>HALF-YEARLY EXAMINATION</b>	

OCTOBER – FEBRUARY			
October	23	Genes and Chromosomes	535
	24	Genetic Material, Genetic Code and Protein Synthesis	553
November	25	Gene Expression and its Regulation	579
	26	Mutations	601
	27	Recombinant DNA Technology: Gene Manipulation	611
	3	Systematics and Five Kingdoms of Life	49

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	4	Kingdom Monera	67
December	5	Kingdom Protista	89
	6	Kingdom Fungi	109
	7	Plant Kingdom	133
January	9	Animal Kingdom	213
	10	Morphology of Earthworm and Cockroach	249
February	11	Morphology of Frog	273
		<b>REVISION</b>	
		<b>ANNUAL EXAMINATION</b>	

## List of Practicals

### PAPER II

#### PRACTICAL WORK – 20 Marks

#### 1. Scientific Techniques

Study parts of a dissecting microscope and compound microscope.

#### 2. Physiology

Students will be required to carry out sequence of instructions or experiments such as:

- Food tests: test for starch, glucose, sucrose, proteins and fats.
- To demonstrate the effect of thawing, heat and alcohol on permeability of beet root cells.
- To demonstrate the action of an inorganic catalyst ( $MnO_2$ ) and enzyme (catalase) from potato / liver on hydrogen peroxide and effect of heat on their activity.
- Demonstration of the effect of temperature on enzyme (diastase) action on starch solution.

#### 3. Morphology

- Study of different modifications in root, stem and leaves.
- Preparation of temporary slide of Mucor / Rhizopus.

#### 4. Cytology

Preparation of -

- Stages of Mitosis in onion root tips.
- Stages of Meiosis in grasshopper testes.

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**5. Spotting: (Three minutes to be given for each spot. Separate continuation sheets should be used which need to be collected at the end of spotting).**

(a) Comment and identify:

- (i) Stages of mitosis
- (ii) Stages of meiosis

(b) Study of stained preparations / specimen of the following:

Identification of plants –

- (i) Bacteria
- (ii) Model of TMV
- (iii) Model of bacteriophage
- (iv) Rust
- (v) Liverworts
- (vi) Moss
- (vii) Fern
- (viii) Pinus
- (ix) Spirogyra
- (x) Mushroom
- (xi) Yeast
- (xii) Lichen

**(c) Identification of animals -**

- (i) Amoeba
- (ii) Paramoecium
- (iii) Bath Sponge
- (iv) Hydra
- (v) Liver Fluke
- (vi) Ascaris
- (vii) Leech
- (viii) Earthworm
- (ix) Prawn / Crab
- (x) Centipede / Millipede
- (xi) Honey Bee
- (xii) Snail (Pila)
- (xiii) Octopus
- (xiv) Starfish
- (xv) Amphioxus / Herdmania
- (xvi) Dogfish
- (xvii) Rohu fish
- (xviii) Frog
- (xix) Snake / Garden lizard
- (xx) Sparrow / Pigeon
- (xxi) Rabbit / Squirrel

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**PROJECT WORK AND PRACTICAL FILE - 10 Marks**

**Project Work – 7 Marks**

Candidate is to creatively execute one project/assignment on any aspect of Biology. Following is only a suggestive list of projects. Teachers may assign or students may choose any one project of their choice.

- (i) Project related to experiment on any aspect of plant life.
- (ii) Project related to any aspect of environment.
- (iii) Projects related to modern researches in Biology, e.g. test-tube babies.
- (iv) Role of genetics in investigating crimes.
- (v) Yeast fermentation and production of alcohol or any other commercial industry dependent on plants and/or animals or their products.

In addition, students may be taught how to culture:

Earthworms.

Protozoans.

Moulds.

Setting up of an aquarium.

**Practical File – 3 Marks**

Teachers are required to assess students on the basis of the Biology Practical file maintained by them during the academic year.

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

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

**Paper II (Practical):** Three hours (20 marks), project work (7 marks) and practical file (3 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 be divided into two sections A and B. Candidates are required to answer **three** out of **five** questions from section A and **two** out of **four** questions from section B. Each question in this part shall carry 10 marks.

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Class XI

## ECONOMICS

Name of the textbook: Frank ISC Economics Class XI

Author: D K Sethi & U Andrews

Publisher: Frank Bros. & Co.

JULY – SEPTEMBER			
Suggested Month	Chapter Number	Name of the Chapter	Page
July	1	Definition, Nature and Scope of Economics	1
	2	Basic Economic Concepts	23
	3	Basic Problems of an Economy	48
	4	Types of Economies	70
August	5	Solutions to the Basic Economic Problems in Different Economies	100
	14	Money: Meaning and Functions	366
	15	Banks: Commercial Bank and Central Bank	383
September	16	Inflation	408
	13	Capital Formation in India	340
	7	Population: Growth and Policy	139
		<b>REVISION</b>	
<b>HALF-YEARLY EXAMINATION</b>			

OCTOBER – FEBRUARY			
October	8	Unemployment in India	186
November	9	The Problem of Poverty in India	211
	10	Problem of inequalities in Income Distribution	239
	17	Meaning, Scope and Importance of Statistics	429
December	19	Measures of Central Value	458
	20	Measures of Dispersion	522
	21	Correlation	567
January	22	Index Numbers	599
February	11	Profile of Indian Agriculture	256
	12	Industrial Sector in India: Some Issues	306
		<b>REVISION</b>	
<b>ANNUAL EXAMINATION</b>			

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

**Part I (30 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 candidate will be required to answer five questions. Each question in this part shall carry 10 marks comprising three sub-parts with the following division of marks:

- (a) Four marks
- (b) Three marks
- (c) Three marks.

## COMMERCE

Name of the textbook: A Complete Course in ISC Commerce (Vol. 1)

Author: R P Maheshwari

Publisher: Pitambar Publishing Company Pvt. Ltd.

JULY - SEPTEMBER			
Suggested Month	Chapter Number	Name of the Chapter	Page
July	1	Meaning and Objectives of Business	2
	2	Classification of Business Activities	21
	3	Human Wants and Human Activities	35
	4	Forms of Business Organisation	53
August	5	Sole Trader	67
	6	Partnership	78
	7	Joint Stock Company	99
	8	Types of Companies (Public and private companies – meaning, differences, advantages and disadvantages)	112
	September	9	Public Enterprises
	10	Co-operative Societies	155
			<b>REVISION</b>
<b>HALF-YEARLY EXAMINATION</b>			

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OCTOBER - FEBRUARY			
October /	11	Stock Exchanges	172
November	12	Channels of Distribution	201
	13	The Wholesale Trade (Wholesalers)	208
	14	The Retail Trade (Retailers)	219
	15	Documents used in Home Trade	252
December	16	Consumers Protection	262
	17	Role of Chambers of Commerce and Industry	274
	18	Foreign Trade	280
	19	Import Procedure	301
January	20	Export Procedure	307
	22	Warehousing	318
February	23	Insurance	328
		<b>REVISION</b>	
<b>ANNUAL EXAMINATION</b>			

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

**Part I ( 24 marks)** will consist of compulsory short answer questions, testing knowledge, application and skills relating to elementary / fundamental aspects of the entire syllabus.

**Part II (56 marks)** will have **nine** questions out of which candidates will be required to answer **seven** questions and each question will carry 8 marks.

**ACCOUNTS**

**Name of the textbook:** New ISC Accountancy (Class XI)  
**Author:** D K Goel, Rajesh Goel and Shelly Goel  
**Publisher:** Arya Publications

JULY - SEPTEMBER			
Suggested Month	Chapter Number	Name of the Chapter	Page
July	1	Meaning and Objectives of Accounting	1.1
	2	Generally Accepted Accounting	2.1

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		Principles (GAAP)	
	3	Basic Accounting Terms	3.1
	4	Accounting Standards	4.1
	5	Bases of Accounting	5.1
	6	Accounting Equations	6.1
	7	Books of Original Entry – Journal	7.1
August	7	Books of Original Entry – Journal (Continued)	7.1
	10	Ledger	10.1
	12	Trial Balance	12.1
	8	Books of Original Entry – Cash Book	8.1
	9	Books of Original Entry – Special Purpose Subsidiary Books	9.1
September	9	Books of Original Entry – Special Purpose Subsidiary Books (Continued)	9.1
	11	Bank Reconciliation Statement	11.1
	14	Capital and Revenue	14.1
		<b>REVISION</b>	
<b>HALF-YEARLY EXAMINATION</b>			

OCTOBER – FEBRUARY			
October /	13	Errors and their Rectification	13.1
November	17	Final Accounts (including manufacturing account)	17.1
	18	Final Accounts (with adjustments)	18.1
	15	Depreciation	15.1
December	15	Depreciation (Continued)	15.1
	16	Provisions and Reserves	16.1
	21	Bills of Exchange	21.1
January	19	Accounts from Incomplete Records	19.1
	20	Accounts of Non-Profit Organisations	20.1
February	22	Introduction to the Use of Computers in Accounting	22.1
	23	Computerised Accounting System	23.1
		<b>REVISION</b>	
<b>ANNUAL EXAMINATION</b>			

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

**Part I (25 marks)** will be compulsory and will consist of **two** questions based on the entire syllabus.

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**Class XI**

**Question 1 (16 marks)** will include compulsory short answer questions, testing knowledge, application and skills relating to elementary / fundamental aspects of the syllabus.

**Question 2 (9 marks)** will be a compulsory numerical question.

**Part II (55 marks)** Candidates will be required to answer **five** questions out of **eight** questions from this section. Each question shall carry 11 marks.

**COMPUTER SCIENCE**

**Name of the textbook: Computer Science With Java  
A Textbook for Class XI**

**Author: Sumita Arora**

**Publisher: Dhanpat Rai & Co**

JULY - SEPTEMBER			
Suggested Month	Chapter Number	Name of the Chapter	Page
July	1	Data Representation	1
	2	Computer Structure	53
	3	Basic Architecture of Simple Microprocessor	77
	4	Working with Operating System	131
	6	Internal Functioning of Computer	229
	August	7	General OOP concepts
8		Introducing Java	259
9		Java Fundamentals	275
10		Flow of Control	343
	12	Functions (Methods) (excluding recursion)	433
	14	Arrays (excluding strings)	521
	September	<b>REVISION</b>	
<b>HALF-YEARLY EXAMINATION</b>			

OCTOBER - FEBRUARY			
October – November	11	Classes in Java	409
	15	Operations on Files	565
	16	Simple Data Structures (conceptuals)	603
	17	Computational Complexity	643

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November – December	5	Propositional Logic & Hardware	189
	13	Using Library Classes	485
January	18	Computing and Ethics	655
February		<b>REVISION</b>	
<b>ANNUAL EXAMINATION</b>			

There will be two papers in the subject:

**Paper I:** Theory

**Paper II:** Practical

**PAPER I – THEORY**

**Paper I** shall be of **3 hours** duration and be divided into two parts.

**Part I (21 marks):** This part will consist of compulsory short answer questions, testing knowledge, application and skills relating to the entire syllabus.

**Part II (49 marks):** This part will be divided into three Sections A, B and C. Candidates are required to answer **three** questions out of **four** from Section A and **two** questions out of **three** in each of the Sections B and C. Each question in this part shall carry 7 marks.

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

**HISTORY**

**Name of the textbook:**  
1. **Mastering World History**  
2. **Modern Indian History - I**

**Author:**  
1. **Low**  
2. **D N Kundra**

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

JULY - SEPTEMBER			
Suggested Month	Topic Number	Name of the Chapter	
July	1	The Rise and Growth of British Power (1740 – 1798) (i – v)	
	8	The First World War (1914 – 1918) (i – iii)	
August	2	The Ascendancy of British Power (1798 – 1818)	
	3	Consolidation of British Power (1818 – 1857) (i – ii)	

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	9	The Search for International Order between (1919 – 1939) (i – ii)
September		<b>REVISION</b>
		<b>HALF-YEARLY EXAMINATION</b>

<b>OCTOBER - FEBRUARY</b>		
October	4	Economic, Social and Cultural Impact of British Rule (i – iii)
November	5	The Uprisings against British Rule (i – ii)
	10	The Great Depression (i – ii)
December	6	Social and Cultural Awakening during the 19 <sup>th</sup> Century (i – iii)
January	7	The Dawn and rise of Indian Nationalism (1885-1905) (i – iv)
	11	The Development of Communism: USSR and China (i – iv)
	12	Japan: Restoration to Parliamentary Democracy
February		<b>REVISION</b>
		<b>ANNUAL EXAMINATION</b>

Refer to the Council Syllabus 2012 for details.

**PSYCHOLOGY**

**Name of the textbook:** 1. General Psychology  
2. General Psychology  
**Author:** 1. S K Mangal  
2. R Sharma  
**Publisher:** 1. Sterling  
2. Kedarnath and Ramnath

<b>JULY - SEPTEMBER</b>		
<b>Suggested Month</b>	<b>Topic Number</b>	<b>Name of the Chapter / Topic</b>
July	-	Defining Psychology; Schools - Structuralism – Functionalism, Behaviourism, Psychoanalysis – Gestalt; Fields – Clinical, Social, Counselling, Developmental, Educational, Organizational, Methods – Observation, Case Study, Survey,

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		Experimental.
August	-	Psychological Tests and uses; Attention; Heredity and Environment
September		Perception
		<b>REVISION</b>
		<b>HALF-YEARLY EXAMINATION</b>

<b>OCTOBER - FEBRUARY</b>		
October-November	-	Emotions, Motivation
December	-	Learning; Frustration and Conflict
January	-	Statistics; Remembering and Forgetting
February	-	Thinking and Problem solving; Reasoning; Creative Thinking
		<b>REVISION</b>
		<b>ANNUAL EXAMINATION</b>

**Internal Assessment:** Two studies to be undertaken on topics given in the Council Syllabus and as guided by the subject teacher.

**BIOTECHNOLOGY**

**Name of the textbook:** A Textbook of Biotechnology for Class XI  
**Author:** R. C. Dubey  
**Publisher:** S. Chand

<b>JULY – SEPTEMBER</b>		
<b>Suggested Month</b>	<b>Topic Number</b>	<b>Name of the Topic</b>
July	1	<b>Introduction to Biotechnology</b>
	(a)	Historical background and the future of Biotechnology
	(b)	Basic concepts of Biochemical technology
August	1 (c)	Scope and importance of Biotechnology
	2	<b>Cell Biology</b>
	(a)	Cell – Basic unit of life

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	(b)	Cell division and cell cycle
September	2 (c)	Errors in cell division
		<b>REVISION</b>
		<b>HALF-YEARLY EXAMINATION</b>

OCTOBER - FEBRUARY		
October – November	3	<b>Growth and Development in Living beings</b>
	(a)	Animal and plant development
December	(b)	Biodiversity and evolution of populations
	4	<b>Genetics</b>
	(a)	Laws of inheritance
January	(b)	Gene mapping
	(c)	Genes in populations
February		<b>REVISION</b>
		<b>ANNUAL EXAMINATION</b>

**PRACTICAL WORK**

Experiment
1. Preparation of buffers
2. Usage of pH meter
3. Preparation of karyotypes
4. Study of various stages of mitosis and meiosis
5. Colour reactions for carbohydrates and proteins
6. Determination of blood groups
7. Construction of pedigrees showing different types of inheritance

**Note: For Project (7 marks) refer to the Council Syllabus 2012.**

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

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

**Paper II (Practical):** Three hours (20 marks), project work (7 marks) and practical file (3 marks)

**Paper I (Theory) 70 marks**

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

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**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.

**GEOGRAPHY**

**Name of the textbook:** 1. ISC Geography Vol 1

2. Practical Geography

**Author:** 1. D R Khullar

2. R L Singh

**Publisher:** 1. Kalyani

2. Kalyani

JULY - SEPTEMBER		
Suggested Month	Topic Number	Name of the topic
July		<b>Principles of Physical Geography</b>
	1	Geography – its interdisciplinary approach & future prospects
	2	<b>Earth's Interior</b> (i) Composition and Structure (ii) Rocks
	2	<b>Changing Face of the Earth Landforms and Processes of Gradation</b> (i) Endogenous processes and associated landforms (ii) Vulcanicity (iii) Earthquakes & Map work
August	3	(iv) Exogenetic process and associated landforms (v) Soil (vi) Fluvial processes and associated landforms (vii) Aeolian processes and associated landforms (viii) Glacial processes and associated landforms (ix) Work of ground water and associated landforms. Water conservation. (x) Marine processes and associated landforms
September	4	<b>Atmosphere</b> (i) Composition and Structure of Atmosphere (ii) Atmospheric Temperature (iii) Atmospheric Pressure (iv) Atmospheric Moisture Map Work – As per the Council Syllabus
		<b>HALF-YEARLY EXAMINATION</b>

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OCTOBER - FEBRUARY		
October	5	<b>The Realms of Water</b> (i) Submarine relief and deposits of the Atlantic, Pacific and Indian oceans (ii) Ocean Water – salinity, temperature, density
November	6	(iii) Ocean water movements <b>Biosphere – Life on the Earth</b> (i) Nature of Biosphere, Concept of Ecosystems, Components of Ecosystem (ii) Major biomes of the Tropics
	7	<b>World Climatic types</b> (i) Equatorial (ii) Monsoon & Trade wind littoral (iii) Wet dry tropical (iv) Dry tropical (Desert)
December	7	<b>Mid Latitudes Climates</b> (i) Mediterranean (ii) Marine west coast (iii) Dry sub tropical (iv) Moist subtropical (v) Moist continental (vi) Dry mid latitude and map work
		<b>High Latitude Climates</b> (i) Boreal (ii) Tundra Ice sheet – Highland climates
January	B	<b>Climate Change</b> Causes & Factors of climate change and Map Work
	8	<b>Natural Hazards, their Causes and Management</b> (i) Hazards of volcanic eruptions and earthquakes (ii) Identification of major drought prone areas (iii) Areas prone to floods/landslides – South Asia Map work
February		<b>REVISION</b>
<b>World Map</b>		Locating and labelling physical features, ocean currents, submarine relief, climatic regions from <b>Principles of Physical Geography</b> and mineral distribution, industrial centres, cities from <b>Man – Environment Interaction</b> .
February		<b>REVISION</b>
<b>ANNUAL EXAMINATION</b>		

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**Practical Work**

1. Surveying - July
  2. Understanding Weather – August
  3. Statistical Diagrams – November
  4. Map Projections – December
- There will be two papers in the subject:

**Paper I – Theory (3 hours) 70 marks**

**Paper II – Practical/ Project Work 30 marks**

**ENVIRONMENTAL EDUCATION**

**Name of the textbook:** ISC Environmental Education Part I  
**Author:** Dr A. N. Rai  
**Publisher:** Goyal Brothers

JULY – SEPTEMBER			
Suggested Month	Topic Number	Name of the Chapter	
July	1	Dimensions of Environment	1-7
	2	Human Role in Environmental Actions	8-13
	3	Society and Environment in India	14-22
August	4	Population and Environment	23-28
	5	Human Activities and Degrading Environment	29-40
	6	Economic and Social Needs and Major Sectors of Development	41-46
	7	Social Factors Affecting Development	47-55
September	8	Impact of Development on the Environment	56-62
	9	Impact of Liberalisation and Globalisation	63-69
	10	Role of Society in Development and Environment	70-77
		<b>REVISION</b>	
<b>HALF-YEARLY EXAMINATION</b>			

*He who has imagination without learning has wings but no feet.  
– Joseph Joubert*

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**Class XI**

<b>OCTOBER - FEBRUARY</b>			
October/ November	11	Pollutants and Pollution	78-91
	12	Noise and Radiation Pollution	92-97
	13	Handling and Management of Hazardous Wastes	98-106
December	14	Ozone Layer Depletion and Greenhouse Effect	107-113
	15	Pollution Related Diseases	114-120
	16	Disasters - Their Impact on the Environment	121-128
	17	Strategies for Reducing Pollution and Improving the Environment	129-136
January	18	Energy	137-143
	19	Conventional Sources of Energy	144-151
	20	Non-Conventional Sources of Energy	152-165
February	21	Energy- Conservation, Management and Planning	166-173
		<b>REVISION</b>	
<b>ANNUAL EXAMINATION</b>			

**Note:**

There will be two papers in the subject:

Paper I      Theory                      3 hours (70 marks)  
Paper II      Practical / Project work      (30 marks)

**Paper I Theory**

There will be one paper of three hours duration carrying 70 marks.

The paper will have two sections:

**Section A (Compulsory)** will contain short answer questions covering the entire syllabus.

**Section B** will consist of questions, which will require detailed answers. There will be a choice of questions in this section.

For practical / project work refer Council syllabus 2012.