

CBSE CIRCULAR 2023-24



केन्द्रीय माध्यमिक शिक्षा बोर्ड
'शिक्षा मंत्रालय भारत सरकार के अधीन एक स्वायत्त संगठन'
CENTRAL BOARD OF SECONDARY EDUCATION
(An Autonomous Organisation Under the Ministry of Education, Govt. of India)



CBSE/ACADEMIC/JS(SS)/2023/

6th April, 2023
Circular No. Acad-45/2023

All Heads of Institutions affiliated to CBSE

Subject : Assessment and Evaluation Practices of the Board for the Session 2023-24

The National Education Policy, 2020 has affirmed the need to move from rote learning to learning more focused on developing the creative and critical thinking capacities of students to meet the challenges of the 21st century proactively. Accordingly, the Board has taken multiple steps towards implementation of Competency Focused Education in schools, ranging from aligning assessment to competencies, development of exemplar resources for teachers and students as well as continuous capacity building of teachers etc.

The Board has released guidelines vide Circular No. Acad- 05/2019 dated 18.01.2019; Circular No. Acad-11/2019 dated 06.03.2019; Circular No. Acad-18/2020 dated 16.03.2020; and Circular No. Acad-57/2022 dated 20.05.2022 to progressively align assessment to the vision of the NEP by including more competency-based questions in the Class X and XII Board examinations.

In continuation to these circulars, the Board is initiating further corresponding changes in the Examination and Assessment practices for the academic session 2023-24 to align assessment to Competency Focused Education. Therefore, in the forthcoming session a greater number of Competency Based Questions or questions that assess application of concepts in real-life situations will be part of the question paper.

The changes for classes IX-XII (2023-24) year-end Board Examinations are as under:

(Classes IX-X)		
Particulars	Academic Session 2022-23	Academic Session 2023-24
Composition of question paper year-end examination/ Board Examination (Theory)	<ul style="list-style-type: none">Competency Based Questions are 40% in the form of Multiple-Choice Questions, Case Based Questions, Source Based Integrated Questions or any other type.Objective Questions are 20%Remaining 40% Questions are Short Answer/ Long Answer Questions	<ul style="list-style-type: none">Competency Focused Questions in the form of MCQs/Case Based Questions, Source-based Integrated Questions or any other type = 50%Select response type questions(MCQ) = 20%Constructed response questions (Short Answer/ Long Answer type Questions, as per existing pattern) = 30%

(Classes XI-XII)		
Particulars	Academic Session 2022-23	Academic Session 2023-24
Composition of question paper year-end examination/ Board Examination (Theory)	<ul style="list-style-type: none">Competency Based Questions are 30% in the form of Multiple-Choice Questions, Case Based Questions, Source Based Integrated Questions or any other type.Objective Question are 20%Remaining 50% Questions are Short Answer/ Long Answer Questions	<ul style="list-style-type: none">Competency Focused Questions in the form of MCQs/Case Based Questions, Source-based Integrated Questions or any other type = 40%Select response type questions(MCQ) = 20%Constructed response questions (Short Answer Questions/Long Answer type Questions, as per existing pattern) = 40%

Curriculum document released by the Board for the Academic Session 2023-24 and the Sample Question Papers may also be referred to for details of the QP design of individual subjects. Learning frameworks for various subjects for classes IX-XII are now available at the <https://cbseacademic.nic.in> for reference.

(Dr. Joseph Emmanuel)
Director (Academics)



'शिक्षा सदन', 17 राऊज़ एवेन्यू, इंस्टीटूशनल एरिया, नई दिल्ली-110002
'Shiksha Sadan', 17, Rouse Avenue, Institutional Area, New Delhi – 110002



फोन/Telephone: 011-23212603 वेबसाइट/Website:<http://cbseacademic.nic.in> मेल/e-mail: directoracad.cbse@nic.in.

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(शिक्षा मंत्रालय भारत सरकार के अधीन एक स्वायत्त संगठन)
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E:1001/CBSE-Acad/Curriculum/2023

March 31, 2023

Cir No: Acad-39/2023

All Heads of Institutions affiliated to CBSE

Subject : Secondary and Senior School Curriculum and Sample Question Papers for the session 2023-24

1. CBSE annually provides the curriculum for classes IX to XII containing academic content, syllabus for examinations with learning outcomes, pedagogical practices, and assessment guidelines.
2. It is important that schools ensure curriculum transactions as per the directions given in the initial pages of the Curriculum document. The subjects should be taught as per the curriculum given by suitably incorporating strategies such as Art-Integrated Education, Experiential Learning, Pedagogical Plans, etc. wherever possible.
3. As CBSE has adopted National Curriculum Framework for Foundational Stage – 2022, schools offering foundational or preparatory education are advised to adhere to the recommendations regarding curriculum, pedagogy, assessment, and other areas described in detail in the NCFFS-2022 and guidelines of the Board issued from time to time.
4. Sample Question Papers with detailed designs of the Question Paper are also available on CBSE's website to reflect the impact of changes made in the curriculum. SQPs also provide students with an idea of the exam pattern and the type of questions that may be asked in the actual examination in order to ensure transparency and reduce stress. Students will also get a clear understanding of the weightage of different topics and the marking scheme to be followed by going through these Sample Question Papers.

Schools are requested to share the Curriculum and Sample Question Papers available on www.cbseacademic.nic.in at the given links, with all students and teachers –

- Secondary & Senior Secondary School Curriculum –
https://cbseacademic.nic.in/curriculum_2024.html
- Sample Question Papers – Secondary –
https://cbseacademic.nic.in/SQP_CLASSX_2023-24.html
- Sample Question Papers – Senior Secondary –
https://cbseacademic.nic.in/SQP_CLASSXII_2023-24.html

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Syllabus

Latest Syllabus 2023-24
(Issued by CBSE on 31st March 2023)
Science (Code No. 086)
Class - X

3 Hours

Marks: 80

Unit No.	Unit	Marks
I	Chemical Substances- Nature and Behaviour	25
II	World of Living	25
III	Natural Phenomena	12
IV	Effects of Current	13
V	Natural Resources	05
	Total	80
	Internal Assessment	20
	Grand Total	100

Theme : Materials

Unit I : Chemical Substances - Nature and Behaviour

Chemical reactions: Chemical equation, Balanced chemical equation, implications of a balanced chemical equation, types of chemical reactions: combination, decomposition, displacement, double displacement, precipitation, endothermic exothermic reactions, oxidation and reduction.

Acids, bases and salts: Their definitions in terms of furnishing of H^+ and OH^- ions, General properties, examples and uses, Neutralization, concept of pH scale (Definition relating to logarithm not required), importance of pH in everyday life; Preparation and uses of Sodium Hydroxide, Bleaching powder, Baking soda, Washing soda and Plaster of Paris.

Metals and non-metals : Properties of metals and non-metals; Reactivity series; Formation and properties of ionic compounds; Basic metallurgical processes; Corrosion and its prevention.

Carbon compounds : Covalent bonding in carbon compounds; Versatile nature of carbon. Homologous series; Nomenclature of carbon compounds containing functional groups (halogens, alcohol, ketones, aldehydes, alkanes and alkynes), difference between saturated hydro carbons and unsaturated hydrocarbons; Chemical properties of carbon compounds (combustion, oxidation, addition and substitution reaction). Ethanol and Ethanoic acid (only properties and uses), soaps and detergents.

Theme : The World of the Living

Unit II : World of Living

Life processes : 'Living Being'. Basic concept of nutrition, respiration, transport and excretion in plants and animals.

Control and co-ordination in animals and plants: Tropic movements in plants; Introduction of plant hormones; Control and co-ordination in animals: Nervous system; Voluntary, involuntary and reflex action; Chemical co-ordination: animal hormones.

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Reproduction: Reproduction in animals and plants (asexual and sexual) reproductive health - need and methods of family planning; Safe sex vs HIV/AIDS. Child bearing and women's health.

Heredity and Evolution: Heredity; Mendel's contribution- Laws for inheritance of traits: Sex determination: brief introduction: (topics excluded - evolution; evolution and classification and evolution should not be equated with progress).

Theme : Natural Phenomena

Unit III : Natural Phenomena

Reflection of light by curved surfaces; Images formed by spherical mirrors, centre of curvature, principal axis, principal focus, focal length, mirror formula (Derivation not required), magnification.

Refraction; Laws of refraction, refractive index.

Refraction of light by spherical lens; Image formed by spherical lenses; Lens formula (Derivation not required); Magnification; Power of a lens.

Functioning of a lens in human eye, defects of vision and their corrections, applications of spherical mirrors and lenses.

Refraction of light through a prism, dispersion of light, scattering of light, applications in daily life (excluding colour of the sun at sunrise and sunset).

Theme : How Things Work

Unit IV : Effects of Current

Electric current, potential difference and electric current; Ohm's law; Resistance, Resistivity, Factors on which the resistance of a conductor depends; Series combination of resistors, parallel combination of resistors and its applications in daily life. Heating effect of electric current and its applications in daily life. Electric power, Interrelation between P, V, I and R.

Magnetic effects of current : Magnetic field, field lines; field due to a current carrying conductor; field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's Left Hand Rule, Direct current; Alternating current: frequency of AC. Advantage of AC over DC; Domestic electric circuits.

Theme : Natural Resources

Unit V : Natural Resources

Our environment: Eco-system, Environmental problems, Ozone depletion, waste production and their solutions; Biodegradable and non-biodegradable substances.

Note for the Teachers:

1. The chapter Management of Natural Resources (NCERT Chapter 16) will not be assessed in the year-end examination. However, learners may be assigned to read this chapter and encouraged to prepare a brief write up to any concept of this chapter in their Portfolio. This may be for Internal Assessment and credit may be given Periodic Assessment/Portfolio).
2. The NCERT text books present information in boxes across the book. These help students to get conceptual clarity. However, the information in these boxes would not be assessed in the year-end examination.



Practicals

Practical should be conducted alongside the concepts taught in theory classes.

List of Experiments

1. A. Finding the pH of the following samples by using pH paper/universal indicator: Unit-I
 - (i) Dilute Hydrochloric Acid

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- (ii) Dilute NaOH solution
- (iii) Dilute Ethanoic Acid solution
- (iv) Lemon juice
- (v) Water
- (vi) Dilute Hydrogen Carbonate solution
- B. Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with: **Unit-I**
 - (a) Litmus solution (Blue/Red)
 - (b) Zinc metal
 - (c) Solid sodium carbonate
- 2. Performing and observing the following reactions and classifying them into: **Unit-I**
 - A. Combination reaction
 - B. Decomposition reaction
 - C. Displacement reaction
 - D. Double displacement reaction
 - (i) Action of water on quicklime
 - (ii) Action of heat on ferrous sulphate crystals
 - (iii) Iron nails kept in copper sulphate solution
 - (iv) Reaction between sodium sulphate and barium chloride solutions
- 3. Observing the action of Zn, Fe, Cu and Al metals on the following salt solutions: **Unit-I**
 - (i) $\text{ZnSO}_4(\text{aq})$
 - (ii) $\text{FeSO}_4(\text{aq})$
 - (iii) $\text{CuSO}_4(\text{aq})$
 - (iv) $\text{Al}_2(\text{SO}_4)_3(\text{aq})$Arranging Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity based on the above result.
- 4. Studying the dependence of potential difference (V) across a resistor on the current (I) passing through it and determine its resistance. Also plotting a graph between V and I. **Unit-IV**
- 5. Determination of the equivalent resistance of two resistors when connected in series and parallel. **Unit-IV**
- 6. Preparing a temporary mount of a leaf peel to show stomata. **Unit-II**
- 7. Experimentally show that carbon dioxide is given out during respiration. **Unit-II**
- 8. Study of the following properties of acetic acid (ethanoic acid): **Unit-I**
 - (i) Odour
 - (ii) solubility in water
 - (iii) effect on litmus
 - (iv) reaction with Sodium Hydrogen Carbonate
- 9. Study of the comparative cleaning capacity of a sample of soap in soft and hard water. **Unit-I**
- 10. Determination of the focal length of:
 - (i) Concave mirror
 - (ii) Convex lensby obtaining the image of a distant object.
- 11. Tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. Measure the angle of incidence, angle of refraction, angle of emergence and interpret the result. **Unit-III**

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12. Studying (a) binary fission in *Amoeba*, and (b) budding in yeast and Hydra with the help of prepared slides. **Unit-II**
13. Tracing the path of the rays of light through a glass prism. **Unit-III**
14. Identification of the different parts of an embryo of a dicot seed (Pea, gram or red kidney bean). **Unit-II**

PRESCRIBED BOOKS:

- Science-Textbook for class IX-NCERT Publication
- Science-Text book for class X- NCERT Publication
- Assessment of Practical Skills in Science-Class IX - CBSE Publication
- Assessment of Practical Skills in Science- Class X- CBSE Publication
- Laboratory Manual-Science-Class IX, NCERT Publication
- Laboratory Manual-Science-Class X, NCERT Publication
- Exemplar Problems Class IX – NCERT Publication
- Exemplar Problems Class X – NCERT Publication

Question Paper Design (Class X) Science (Code No. 086)

Theory (80 marks)

Competencies	Total
Demonstrate Knowledge and Understanding	46%
Application of Knowledge/Concepts	22%
Formulate, Analyze, Evaluate and Create	32%
	100%

Note:

- Typology of Questions: VSA including objective type questions, Assertion – Reasoning type questions; SA; LA; Source-based/ Case-based/ Passage-based/ Integrated assessment questions.
- An internal choice of approximately 33% would be provided.

Internal Assessment (20 Marks)

- **Periodic Assessment** - 05 marks + 05 marks
- **Subject Enrichment** (Practical Work) - 05 marks
- **Portfolio** - 05 marks

Suggestive verbs for various competencies

- **Demonstrate Knowledge and Understanding**
State, name, list, identify, define, suggest, describe, outline, summarize, etc.
- **Application of Knowledge/Concepts**
Calculate, illustrate, show, adapt, explain, distinguish, etc.
- **Formulate, Analyze, Evaluate and Create**
Interpret, analyze, compare, contrast, examine, evaluate, discuss, construct, etc.