SCIENCE

Class 10

BOARD OF SECONDARY EDUCATION, RAJASTHAN, AJMER

Text Book Writing Committee

Book - Science

Class - 10

Convener and Author

Dr. Manoj Kumar Yadav

Associate Professor

Department of Botany

Samrat Prithviraj Chauhan

Government College, Ajmer

Authors

Dr. Hari Shankar Sharma

Associate Professor

Department of Chemistry

Government College, Kota

Dr. Vivek Mandot

Associate Professor

Department of Physics

V.K.B. Government Girl's College,

Dungarpur

Dr. Abhisek Vashishtha

Assistant Professor

Department of Microbiology

Maharaja Ganga Singh University,

Bikaner

Dr. Manisha Maheshwari

Lecturer in Chemistry

Government Sr. Sec. School,

Pratapnagar, Bhilwara

Dr. Narendra Choudhary

Lecturer in Biology

Government Sr. Sec. School,

Banar, Jodhpur

Text Book Syllabus Committee

Book - Science

Class - 10

Convener : Pro. Madhur Mohan Ranga
Department of Environmental Science
Sarguja University, Ambikapur (Chhatisgarh)

Members :

1. Shri Dinesh Chand Sharma, Principal
   Govt. Adarsh Sr. Sec. School, Kanch Roli
   Teh. Hindon, Karoli

2. Shri Vishnu Prasad Chaturvedi
   Retired Principal
   2, Tilak Nagar, Pali

3. Shri Abhaya Singh Rathore, S.D.I.
   Divisional Sanskrit Education Office, Udaipur

4. Shri Ajay Kumar Sharma, Sr. Teacher
   Government Sr. Sec. School, Surwal, Sawai Madhopur

5. Mrs. Indira Sharma, Sr. Teacher
   Govt. Sr. Sec. School, Balchandpada , Bundi

6. Shri Ambika Prasad Tiwari, Sr. Teacher
   Govt. Sec. School, Dakatara, Jalore

Foreword

For students, textbook is the basis of sequential studies, confirmation, review and future studies. The level of school text book becomes very important from the content and teaching - method's perspective. Text-books should not be made insentient or to glorify things. Even today text-books are an important instrument of teaching-learning process, which cannot be ignored.

For the last few years the syllabus of Board of Secondary Education, Rajasthan was felt to be lacking in representation of linguistic and cultural events of Rajasthan. Keeping this in view the state government decided to implement its syllabus through Board of Secondary Education, Rajasthan, for the students of class 9-12. In accordance to this, Board, has got assembled the text-books for classes 9 to 11 from the session 2016-17 based on the set syllabus. Hope these text books will be instrumental in providing the students with originality of thought process, contemplation and expression.

Prof. B.L. Choudhary
Chairman
Board of Secondary Education Rajasthan
Ajmer

Preface

This text-book of science for class X of Board of Secondary Education Rajasthan has been written for the creative learning of the students.

According to the syllabus, twenty chapters have been compiled in this text-book. Recent information has been incorporated at relevant points which will enhance the utility and content of the text book.

In the text-book information regarding food, human health, genetics, blood groups, chemistry in everyday life, atomic theory, light, electric current, natural resources, economic importance of plants and animals, biodiversity and its conservation etc., have been incorporated.

Important points have been outlined at the end of each chapter which will help students while studying. From examination preparation point of view, objective type questions, very short type, short type and essay type questions have been included.

The technical words have been used in the text in accordance with the standard dictionaries. Figures, charts and tables have been used in the text-book, as per the need. The sequentiality of content has been maintained in the text. Efforts have been made to maintain the level according to the students of class X.

Suggestions are invited from intellectuals, authors and teachers. Despite all efforts, some errors may have persisted in the present text. The suggestions of readers are welcomed in this aspect too. Your suggestions will go a long-way in the betterment of the present text.

Convener

Science

Time : 3.15 Hours | Total marks : 80

S.N.	Name of Unit	Serial No. of Chapters	Name of Chapters	Marks Weightage	Total Marks of Unit
1.	Human body and Activities	1	Food and Human Health	4	17
		2	Human System	6	
		3.	Genetics	4	
		4.	Immunity and Blood Groups	3	
2.	Substance and Reactions	5.	Chemistry in Every-day Life	4	16
		6.	Chemical Reaction and Catalyst	3	
		7.	Atomic theory, Periodic Classification and Properties of Elements	5	
3.	Physical Events	8.	Carbon and and its Compounds	4	15
		9.	Light	5	
		10.	Electric Current	5	
		11.	Work, Energy and Power	5	
4.	Natural Resources	12.	Main natural Resources	4	12
		13.	Waste and its Management	3	
		14.	Economic Importance of Plants and Animals	5	
5.	Earth and Space	15.	Structure of Earth	3	12
		16.	Universe and Organic Evolution	3	
		17.	Search of Life Outside Earth	3	
		18.	Indian Scientists : Biography and Achievements	3	
6.	Environment	19.	Biodiversity and Its Conservation	5	5
7.	Road Safety	20.	Road Safety Education	3	3

Details of the Syllabus

Unit-1 Human body and Activities

Chapter-1 Food and Human Health

- Balance and unbalance food, Vitamin malnutrition, protein malnutrition, mineral malnutrition, human health : properties of drinking water and harmful; effects of polluted water obesity, blood pressure; intoxicant- gutkha, tobacco, alcohol, opium, other intoxicant substances, misuses of medicines, adulturation in food products.

Chapter-2 Human System

- Digestive system, respiration and respiratory system, blood and circulatory system, excretory system, reproductive system, nrevous system and endocrinal system.

Chapter-3 Genetics

-Mendelism, discovery of Mendelism, genetics terminology, Mendel's laws of inheritance and importance.

Chapter-4 Immunity and Blood Groups

- Antigen and antibody, blood and blood groups, Rh factor, blood transformation, significance of blood group heredity, importance of organ and body donation.

Unit-2 Substance and Reactions

Chapter-5 Chemistry in Everyday Life

- Acid, base, salt : definitions, general properties, uses pH scale, importance of pH in daily life, some important compounds in everyday life : sodium chloride, bleaching powder, baking soda, washing soda, plaster of paris, soap and detergent.

Chapter-6 Chemical Reaction and Catalyst

- Physical and chemical change, chemical equation, chemical reaction : addition, replacement, dissociation, slow and fast reversible and irreversible reactions, oxidation - reduction, neutralization, types of catalyst and properties.

Chapter-7 Atomic theory, Periodic Classification and Properties of Elements

- Atomic theory of Dalton, atomic model of Thomson, Rutherford's, gold foil experiment, hypothesis of Neil's Bohr, necessity of classification, classification, Mendeleef's periodic table, modern periodic table, periodicity in properties, valency, atomic size, metallic and non-metallic properties.

Chapter-8 Carbon and and its Compounds

-Characteristics of carbon atom, hydrocarbons and classification of hydrocarbons, Allotropes of carbon, Catenation in carbon, nomenclature of simple organic compounds - Alkane, Alkene, Alkyne.

Some important organic compounds useful in daily life.

Unit-3 Physical Events

Chapter-9 Light

- Reflection of light, laws of reflection, spherical mirrors, image formation by spherical mirrors, mirror formula, magnification, refraction, refraction by spherical lens, image formation in lens, power of lens, defect in eyes and their corrections.

Chapter-10 Electric Current

- Electric current, unit of current, potential and potential difference, prevailing symbols of useful equipments in electrical circuits, ohm's law, resistance, dependence of resistance on length and cross-sectional area, resistivity, combination of resistances, thermal effect of current, magnetic effect of current, direction of magnetic field, magnetic field and field lines, electro magnetic induction, electric generator.

Chapter-11 Work, Energy and Power

- Work, unit of work, energy, types of energy, mechanical energy, kinetic energy, potential energy, electrical energy, conservation of energy (C.F.L., L.E.D. etc.) power, unit of power, electric power.

Unit-4 Natural Resources

Chapter-12 Main Natural Resources

- Meaning of natural resources, types of natural resources, management of natural resources, judicious use and conservation, need for conservation, ways of conservation, forest conservation and management, social forestry, conservation of wildlife, water conservation and management, conservation of coal and petroleum, participation of people in conservation of natural resources Chipko movement.

Chapter-13 Waste and its Management

- Definition of waste, types of waste, sources of waste, losses due to waste, waste management.

Chapter-14 Economic Importance of Plants and Animals

- Economic importance of plants - food plants, medicinal plants, plants of constructional importance, fibre yielding plants, timber wood : economic importance of animals, apiculture, sericulture, lac culture, fishery, animal husbandry, wool industry, coral and coral reefs, pearl culture.

Unit-5 Earth and Space

Chapter-15 Structure of Earth

- Origin and evolution of earth, structure of earth, energy system of the earth - internal and external tectonic forces- volcano, earthquake, tsunami, weathering erosion, wind, water, glaciers, oceanic currents.

Chapter-16 Universe and Organic Evolution

- Origin of the universe, indian cosmology, physical and spritual theories for the origin of life, origin and types of fossils, organic evolution, origin of species, phylogeny.

Chapter-17 Search of Life Outside Earth

- Position of the earth in space, possibilities of life in space, main space campaign, India in space, international space station.

Chapter-18 Indian Scientists : Biography and Achievements

- Indian Scientists : Biography and Achievements- Sushruta, Charak, C.V. Raman, Dr. Homi Jahangir Bhabha, Prafulla Chandra Ray, Dr. Panchanan Maheshwari, Dr. Salim Ali (Ornithologist), Dr. A.P.J. Abdul Kalam.

Unit-6 Environment

Chapter-19 Biodiversity and Its Conservation

- Levels of biodiversity, global biodiversity, biodiversity of India, biodiversity hot spots, importance of biodiversity, threats to biodiversity, conservation of biodiversity.

Unit-7 Road Safety

Chapter-20 Road Safety Education

Prescribe Book -

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