

# **Government PG College, Ambala Cantt.**

**Course file: Session 2023-24**

**Faculty Name: Dr. ABHA CHAUDHARY**

**Class: B. Com/Semester II/Section A, B, C**

**Subject Code and name: B23-CHE-204/Introductory Chemistry-II (MDC)**

## **Syllabus**

**Maximum Marks: 50**

**External: 35 Internal: 15**

**Time: 3 hours**

Note: The examiner is requested to set nine questions in all, selecting two questions from each SECTION and one question (Question No.1 based on entire syllabus will consist of short answer type. All questions carry equal marks. The candidate is required to attempt five questions in all selecting one from each SECTION. Question No.1 is compulsory. Log table and nonprogrammable calculator is allowed.

### **Unit-I**

Renowned Indian Scientists Brief Biography of Renowned Indian Scientists (Hargobind Khurana, Dr. P.C. Ray, Sir C.V. Raman, Dr. A.P.J. Abdul Kalam, C. N. R. Rao, Dr. Vikram Sara Bhai, Dr. Homi Jahangir Bhabha, Dr. J.C. Bose, Dr. S. N. Bose)

### **Unit-II**

Metal and Non-Metals: Periodic table, classification of elements, physical and chemical aspects of metals and non-metals, Ore and Minerals of Iron, Copper, Aluminium, alloys  
Physical Properties of Matter

### **Unit-III**

Classification of matter, properties, uses, ideal gas equation, real gas equation, some important compounds (baking soda, washing soda, plaster of Paris, gypsum,, glass)

### **Unit-IV**

Soil and fertilizers: Green revolution, soil: types of soil and their components for fertility, grow condition, pH, irrigation, biofertilizers, chemical fertilizers and their uses, acid rain.

## **Text Books**

1. Introductory Chemistry-II Bilingual, Unique Publications
2. Introductory Chemistry-II Vijaya Publications

## **Reference Books**

1. Chemistry In Daily Life : Third Edition by Kirpal Singh , PHI Learning
2. General Chemistry: Principles, Patterns, and Applications, Bruce Averill, Strategic Energy Security Solution, Patricia Eldredge, R.H. Hand, LLC, Copyright Year: 2011
3. The Great Indian Scientists Paperback- 1 January 2017 Cengage Learning India

## **COURSE OBJECTIVES**

The course objectives outlined are as follows:

1. Identify the role of Indian scientists in the upliftment of research in India
2. **Classification of elements with their properties:** Describe how the evolution of Periodic table took place and how the 118 elements discovered till now can be classified. Identify metals and non metals on the basis of their Physical and chemical properties and their use, understand the difference between ore and minerals. Identify the ores of Iron, Copper, Aluminium. Use of different kind of alloys in our daily life
3. **Three states of matter:** Classify matter on the basis of forces of attraction and spaces between their molecules. Identify the classes of matter on the basis of their properties. Understand the gas laws that lead to ideal gas equation, real gas equation, Preparation and importance of chemical compounds such as baking soda, washing soda, plaster of Paris, gypsum, and glass
4. **Role of fertilizers in fertility of soil:** Identify the need of Green revolution, identify components of soil, types of soil and their components for fertility, grow condition, pH. Apply biofertilizers and chemical fertilizers for irrigation

## **COURSE OUTCOMES**

After completing this course, the learner will be able to:

1. To learn about role of Indian scientists in the upliftment of research
2. To learn about classification of elements with their properties
3. To learn about three states of matter
4. To get more knowledge about role of fertilizers in fertility of soil

## Lesson Plan

<b>Week No</b>	<b>Scheduled Dates</b>	<b>Topics to be covered</b>
<b>1</b>	<b>12-17 February</b>	Metal and Non-Metals classification of elements
<b>2</b>	<b>19-24 February</b>	Physical and chemical aspects of metals and non metals
<b>3</b>	<b>26 Feb -2 March</b>	Ore and Minerals of Iron, Copper, Aluminium, alloys
<b>4</b>	<b>4-9 March</b>	Periodic table
<b>5</b>	<b>11-16 March</b>	Periodic table
<b>6</b>	<b>18-23 March</b>	Physical Properties of Matter, Classification of matter
<b>7</b>	<b>1-6 April</b>	properties, uses, ideal gas equation, real gas equation
<b>8</b>	<b>8-13 April</b>	some important compounds (baking soda, washing soda
<b>9</b>	<b>15-20 April</b>	plaster of Paris, gypsum, glass
<b>10</b>	<b>22-27 April</b>	Soil and fertilizers Green revolution, soil: types of soil and their components for Fertility, grow condition
<b>11</b>	<b>29 April - 4 May</b>	pH, irrigation, biofertilizers, chemical fertilizers and their uses, acid rain
<b>12</b>	<b>6-11 May</b>	Renowned Indian Scientists: Brief Biography of Renowned Indian Scientists (Hargobind Khurana, Dr. P.C. Ray)
<b>13</b>	<b>13-18 May</b>	Sir C.V. Raman, Dr. A.P.J. Abdul Kalam, C. N. R. Rao
<b>14</b>	<b>20-25 May</b>	Dr. Vikram Sara Bhai, Dr. Homi Jahangir Bhabha, Dr. J.C. Bose, Dr. S. N. Bose
<b>15</b>	<b>27 May - 1 June</b>	Final Test, Assignments and REVISION of Contents
<b>16</b>	<b>3 - 8 June</b>	Previous Year Question Papers Discussion

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