CLASS-XII (Science)

ANNUAL CURRICULUM PLAN 2023-24

Empowering Education

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ODM EDUCATIONAL GROUP

ANNUAL CURRICULUM PLAN | SESSION 2023 - 24

The Annual Curriculum Plan refers to a comprehensive document or outline that provides a structured overview of the educational content and activities to be covered throughout an academic year. It serves as a roadmap for teachers, administrators, and educational institutions to ensure a coherent and balanced delivery of the curriculum.

Objectives of the ACP

1. **Learning Objectives**: This plan includes specific learning objectives for each subject or topic. These objectives define what students are expected to know, understand, and be able to do by the end of the year.
2. **Content Outline**: It provides a breakdown of the content to be covered in each subject area. This may include subtopics, chapters, or units to be addressed during different periods of the academic year.
3. **Assessment and Evaluation**: It specifies assessment methods, such as tests, projects, or presentations that will be used to evaluate student progress and understanding. It may also include information about grading criteria and the frequency of assessments.
4. **Integration and Interdisciplinary Connections**: In some cases, it will highlight opportunities for integrating subjects or making interdisciplinary connections. This promotes a holistic and interconnected approach to learning.
5. It serves as a guiding document for teachers; helping them stay organised and focused throughout the academic year. It provides a framework for instructional planning, content delivery, and assessment, ensuring a consistent and well-rounded educational experience for students.
6. **Resources and Materials**: It also includes the list of the textbooks, supplementary materials, and resources needed for effective teaching and learning. It ensures that teachers have access to appropriate resources to support the curriculum.

Objectives | CBSE Curriculum

1. It aims to provide a comprehensive and holistic educational experience to students.
2. **Child-Centric Approach**: The CBSE curriculum places the student at the centre of the learning process. It recognizes the individuality, abilities, and interests of each student and aims to cater to their unique needs. The curriculum promotes student engagement, critical thinking, and overall development.
3. **Learning Outcomes**: The CBSE curriculum focuses on clearly defined learning outcomes. It specifies the knowledge, understanding, skills, and attitudes that students should acquire at each grade level. Learning outcomes help in setting clear expectations and provide a framework for teaching, learning, and assessment.
4. **Interdisciplinary Approach**: The CBSE curriculum encourages an interdisciplinary approach, integrating knowledge and skills from multiple subjects. It emphasizes connections between different subjects, promoting a holistic understanding of concepts and their real-world applications.
5. **Life Skills and Values**: CBSE places significant importance on the development of life skills and values among students. The curriculum includes components that aim to cultivate values such as honesty, empathy, respect, and responsible citizenship. It also focuses on developing essential life skills such as communication, critical thinking, problem-solving, and collaboration.
6. **Inclusion and Diversity**: CBSE curriculum promotes inclusivity and caters to the diverse needs of students. It recognizes the importance of providing equal opportunities and adapting teaching and assessment strategies to accommodate learners with different abilities, backgrounds, and learning styles.

Examination Details | Session 2023 - 24

Examination Schedule

Examination	Tentative Timeline (Exam Starts)	Tentative Timeline (Exam Ends)
Post Summer Test	21st June, 2023	27th June, 2023
Pre - Boards I	7th Oct, 2023	18th Oct, 2023
Pre - Boards II	1st Dec, 2023	7th Dec, 2023
Sahodaya Pre - Boards	TBD by Sahodaya Complex	
Annual Examination	TBD by the CBSE	

The Examination Schedule is tentative & subjected to change depending upon the external factors. If there will be any changes in the schedule/portion, it will be notified well before the examination by the School.

Marks & Weightage

Subject	Post Summer Test Full Marks - 35/40 Time - 90 Minutes	Pre - Boards I Full Marks - 70/80 Time - 3 Hours	Pre - Boards II Full Marks - 70/80 Time - 3 Hours	Annual Full Marks - 100 Time - 3 Hours (As per the CBSE Guidelines)
English Physics Chemistry Mathematics Biology Computer Science Phy. Edu.	- Pen & Paper Test: 35 or 40 Marks depending upon the subject	- Pen & Paper Test: 70 or 80 Marks depending upon the subject.	- Pen & Paper Test: 70 or 80 Marks depending upon the subject.	- Theory: 70 or 80 Marks depending upon the subject. - Practical: 30 or 20 Marks depending upon the subject

Examination Portion

English -

Post Summer Test	Pre-Boards I	Pre-Boards II	Annual
1. **Flamingo:** English Reader published by National Council of Education Research and Training, New Delhi **(Prose)** ● The Last Lesson, ● Lost Spring **(Poetry)** ● My Mother at Sixty-Six 2. **Vistas**: Supplementary Reader published by National Council of Education Research and Training, New Delhi ● The Third Level ● The Tiger King ● Creative Writing Skills ● Notice Writing ● Letters (Formal)	1. **Flamingo:** English Reader published by National Council of Education Research and Training, New Delhi **(Prose)** ● The Last Lesson ● Lost Spring ● Deep Water ● The Rattrap ● Indigo ● Poets and Pancakes **(Poetry)** ● My Mother at Sixty-Six ● Keeping Quiet ● A Thing of Beauty ● A Roadside Stand 2. **Vistas:** Supplementary Reader published by National Council of Education Research and Training, New Delhi ● The Third Level ● The Tiger King ● Journey to the End of the Earth	1. **Flamingo:** English Reader published by National Council of Education Research and Training, New Delhi **(Prose)** ● The Last Lesson ● Lost Spring ● Deep Water ● The Rattrap ● Indigo ● Poets and Pancakes ● The Interview ● Going Places (**Poetry**) ● My Mother at Sixty-Six ● Keeping Quiet ● A Thing of Beauty ● A Roadside Stand ● Aunt Jennifer's Tigers 2. **Vistas:** Supplementary Reader published by National Council of Education Research and Training, New Delhi	As per the CBSE guidelines.

Post Summer Test	Pre-Boards I	Pre-Boards II	Annual
	• The Enemy • Creative Writing Skills • Notice Writing • Formal/Informal Invitation and Reply • Formal Letters • Article Writing	• The Third Level • The Tiger King • Journey to the End of the Earth • The Enemy • On the Face of It • Memories of Childhood • Creative Writing Skills • Notice Writing • Formal/Informal Invitation and Reply • Formal Letters/Job Applications • Article/ Report Writing	

Physics –

Post Summer Test	Pre-Boards I	Pre-Boards II	Annual
• Chapter-1: Electric charges and fields • Chapter-2: Electrostatic potential and capacitance	• Chapter-1: Electric charges and fields • Chapter-2: Electrostatic potential and capacitance • Chapter-3: Current electricity • Chapter-4: Moving charges and magnetism • Chapter-5: Magnetism and matter • Chapter-6 : Electromagnetic induction • Chapter-7: Alternating current • Chapter-8: Electromagnetic waves • Chapter-9: Ray optics and optical instruments • Chapter-10: Wave optics • Chapter-11: Dual nature of radiation and matter	• Chapter-1: Electric charges and fields • Chapter-2: Electrostatic potential and capacitance • Chapter-3 : Current electricity • Chapter-4: Moving charges and magnetism • Chapter-5: Magnetism and matter • Chapter-6 : Electromagnetic induction • Chapter-7 : Alternating current • Chapter-8: Electromagnetic waves • Chapter-9: Ray optics and optical instruments • Chapter-10: Wave optics • Chapter-11: Dual nature of radiation and matter • Chapter-12:Atoms • Chapter-13: Nuclei • Chapter-14: Semiconductor Electronics: materials, devices and simple circuits	As per the CBSE guidelines.

Chemistry –

Post Summer Test	Pre-Boards I	Pre-Boards II	Annual
• Haloalkanes and Haloarenes	• Solution • Electro Chemistry • Chemical Kinetics • -D & f-block Elements • Coordination Compounds • Haloalkanes & Haloarenes • Alcohols, Phenols & Ethers • Aldehydes, Ketones and Carboxylic Acid • Amines • Biomolecules	• Solution • Electro Chemistry • Chemical Kinetics • -D & f-block Elements • Coordination Compounds • Haloalkanes & Haloarenes • Alcohols, Phenols & Ethers • Aldehydes, Ketones and Carboxylic Acid • Amines • Biomolecules	As per the CBSE guidelines.

Mathematics –

Post Summer Test	Pre-Boards I	Pre-Boards II	Annual
• Relation and functions • Inverse Trigonometric functions • Matrices • Determinants	• Relation and functions • Algebra • Calculus • Vectors and Three Dimensional Geometry	• Relation and functions • Algebra • Calculus • Vectors and Three Dimensional Geometry • Linear Programming Problems • Probability	As per the CBSE guidelines.

Biology –

Post Summer Test	Pre-Boards I	Pre-Boards II	Annual
• Chapter-2: Sexual Reproduction in Flowering Plants • Chapter-3 Human Reproduction • Chapter-4 Reproductive Health	• Chapter – 2 Sexual Reproduction in Flowering Plants • Chapter – 3 Human Reproduction • Chapter – 4 Reproductive Health • Chapter – 5 Principles of Inheritance and Variation • Chapter – 6 Molecular Basis of Inheritance • Chapter – 7 Evolution • Chapter-8 Human Health and Diseases • Chapter-10 Microbes in Human Welfare	• Chapter – 2 Sexual Reproduction in Flowering Plants • Chapter – 3 Human Reproduction • Chapter – 4 Reproductive Health • Chapter – 5 Principles of Inheritance and Variation • Chapter – 6 Molecular Basis of Inheritance • Chapter – 7 Evolution • Chapter-8 Human Health and Diseases • Chapter-10 Microbes in Human Welfare	As per the CBSE guidelines.

Post Summer Test	Pre-Boards I	Pre-Boards II	Annual
	• Chapter-11 Biotechnology- Principles and Processes	• Chapter-11 Biotechnology- Principles and Processes • Chapter-12 Biotechnology and its Applications • Chapter13 Organism and Population • Chapter-14 Ecosystem • Chapter-15 Biodiversity and Conservation	

Computer Science –

Post Summer Test	Pre-Boards I	Pre-Boards II	Annual
• Python Revision Tour • Working with Function • Python Libraries	• Python Revision Tour • Working with Function • Python Libraries • Exception Handling • File Handling • Database Concepts • SQL (SQL + Interactive Python with MYSQL)	• Python Revision Tour • Working with Function • Python Libraries • Exception Handling • File Handling • Database Concepts • SQL (SQL + Interactive Python with MYSQL) • Data Structure • Computer Networks	As per the CBSE guidelines.

Physical Education

Post Summer Test	Pre-Boards I	Pre-Boards II	Annual
• Management of Sporting Events • Children and Women in Sports.	• Management of Sporting Events • Children and Women in Sports. • Yoga as preventive measure for lifestyle disease • Physical Education and Sports for children with special needs. • Sports and Nutrition • Test and Measurement in Sports • Physiology and Injuries in Sports.	• Management of Sporting Events • Children and Women in Sports. • Yoga as preventive measure for lifestyle disease • Physical education and sport for children with special needs. • Sports and Nutrition • Test and Measurement in Sports • Physiology and Injuries in Sports. • Biomechanics and Sports • Psychology and Sports • Training in Sports	As per the CBSE guidelines.

Blueprint & Learning Outcomes | Session 2023 - 24

Subject - English

Prescribe Books:-

1. Text Book for Class XII Part – I: **(FLAMINGO)** NCERT
2. Text Book for Class XII Part – II: **(VISTAS)** NCERT

(A) Blueprint

(i) Post Summer Test -

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Reading Skills - Reading Comprehension through Unseen Passage. The passage may be factual, descriptive or literary.	10	--	--	--	--	10
Creative Writing Skills : Notice	--	--	--	1(OR)		4
Letters (Formal)	--	--	--	1(OR)		4
Literature Text Book and Supplementary Reading Text Poem Extract.	4	--	--	--	--	4
Short Questions (Any 4 out of 5)	--	4	--	--	--	8
Long Question from Flamingo.	--	--	--	--	1 (OR)	5
Long Question from Vistas.	--	--	--	--	1 (OR)	5
Total -	**14 (1)**	**4 (2)**	**--**	**2 (4)**	**2 (5)**	**40**

(ii) Pre-Boards I -

Chapters	Mark Distribution				
	1 Mark	2 Marks	4 Marks	5 Marks	Total
Reading Skills - Reading Comprehension through Unseen Passage. The passage may be factual, descriptive or literary.	12	--	--	--	12
Case-based factual passage with verbal/visual inputs like statistical data, charts etc	10	--	--	--	10
Creative Writing Skills:- Notice Writing	--	--	1(OR)	--	4
Formal/Informal Invitation and Reply	--	--	1(OR)	--	4
Formal Letters/Job Application	--	--	--	1(OR)	5
Article/ Report Writing	--	--	--	1(OR)	5
Literature Text Book and Supplementary Reading Text: One Poetry extract out of two, from the book Flamingo.	6(OR)	--	--	--	6

Chapters	Mark Distribution				
	1 Mark	2 Marks	4 Marks	5 Marks	Total
One Prose extract out of two, from the book Vistas.	4(OR)	--	--	--	4
One prose extract out of two from the book Flamingo.	6(OR)	--	--	--	6
Short answer type questions (from Prose and Poetry from the book Flamingo), to be answered in 40-50 words each. Questions should elicit inferential responses through critical thinking. (Any Five questions out of the six questions are to be answered.)	--	5	--	--	10
Short answer type questions, from Prose (Vistas), to be answered in 40- 50 words each. Questions should elicit inferential responses through critical thinking. (Any two out of three questions to be done.)	--	2	--	--	4
One Long answer type question, from Prose/Poetry (Flamingo), to be answered in 120-150 words. Questions can be based on incident / theme / passage / extract / event as reference points to assess extrapolation beyond and across the text. The question will elicit analytical and evaluative response from the student. (Any one out of two questions to be done.)	--	--	--	1(OR)	5
One Long answer type question, based on the chapters from the book Vistas, to be answered in 120-150 words, to assess global comprehension and extrapolation beyond the text. Questions to provide analytical and evaluative responses using incidents, events, themes, as reference points. (Any one out of two questions to be done.)	--	--	--	1(OR)	5
Internal Assessment					
Listening-5 Marks	--	--	--	1	5
Speaking-5 Marks	--	--	--	1	5
Project Work-10 Marks	--	--	--	2	10
Total -	**38 (1)**	**7 (2)**	**2 (4)**	**8 (5)**	**100**

(iii) Pre-Boards II -

Chapters	Mark Distribution				
	1 Mark	2 Marks	4 Marks	5 Marks	Total
Reading Skills - Reading Comprehension through Unseen Passage:- The passage may be factual, descriptive or literary.	12	--	--	--	12
Case-based factual passage with verbal/visual inputs like statistical data, charts etc	10	--	--	--	10
Creative Writing Skills: Notice	--	--	1(OR)	--	4

Chapters	Mark Distribution				
	1 Mark	2 Marks	4 Marks	5 Marks	Total
Formal/Informal Invitation and Reply	--	--	1(OR)	--	4
Letters (Formal)	--	--	--	1(OR)	5
Article/ Report Writing	--	--	--	1(OR)	5
Literature Text Book and Supplementary Reading Text: One Poetry extract out of two, from the book Flamingo.	6 (OR)	--	--	--	6
One Prose extract out of two, from the book Vistas.	4 (OR)	--	--	--	4
One prose extract out of two from the book Flamingo.	6 (OR)	--	--	--	6
Short answer type questions (from Prose and Poetry from the book Flamingo), to be answered in 40-50 words each. Questions should elicit inferential responses through critical thinking. Five questions out of the six given are to be answered.	--	5	--	--	10
Short answer type questions, from Prose (Vistas), to be answered in 40- 50 words each. Questions should elicit inferential responses through critical thinking. Any two out of three questions to be done.	--	2	--	--	4
One Long answer type question, from Prose/Poetry (Flamingo), to be answered in 120-150 words. Questions can be based on incident / theme / passage / extract / event as reference points to assess extrapolation beyond and across the text. The question will elicit analytical and evaluative response from the student. Any one out of two questions to be done.	--	--	--	1 (OR)	5
One Long answer type question, based on the chapters from the book Vistas, to be answered in 120-150 words, to assess global comprehension and extrapolation beyond the text. Questions to provide analytical and evaluative responses using incidents, events, themes, as reference points. Any one out of two questions to be done.	--	--	--	1 (OR)	5
Internal Assessment	--	--	--	--	--
Listening-5 Marks	--	--	--	1	5
Speaking-5 Marks	--	--	--	1	5
Project Work-10 Marks	--	--	--	2	10
Total -	**38 (1)**	**7 (2)**	**2 (4)**	**8 (5)**	**100**

(B) Learning Outcomes

Name of the Chapter	Learning Outcomes
The Last Lesson (Flamingo)	• The importance of education and the necessity to respect and learn one's own language. • The unfair practice of linguistic Chauvinism through the historical perspective of World War I. • Realize the importance of a teacher in the life of a student. • Understand the narrative techniques used by the author and enhance vocabulary.
My Mother At Sixty-Six (Flamingo)	• Students to appreciate poetry and read aloud with proper intonation. • To prepare the students for poetic forms and adept them with the figures of speech, rhyme and rhythm. • Realization of the complications of relationships between human beings and fears associated with it, especially a bond between a mother and a daughter. • Understanding the form of the poem: a narrative of fourteen lines written as a single sentence (enjambment). • Learning the 'stream-of-consciousness' technique where one thought leads to another as the poem is written is written in a single sentence punctuated by commas.
The Third Level (Vistas)	• Understanding of the science fiction genre of 'time travel' (the interweaving of fantasy with reality). • Realization of the vulnerable side of the common man in the modern age. • Understanding of the nature of escapism as a psychological refuge from the grim realities of the modern age with a desire to stay with the peaceful past. • Understanding of the ironical ending of the story. • Learning of new diction and sentence structure.
Lost Spring (Flamingo)	• Learning about the perpetual poverty in our society that forces poor children into labour early in life and denied the opportunity of schooling. • Understanding of those traditions which condemn poor children to a life of exploitation. • Understanding of the facts that the callousness of the society and the political class only adds to the sufferings of the poor people. • Understanding of the Metaphorical implication of lost spring as lost childhood.
The Tiger King (Vistas)	• Inculcate the values of empathy, courage, kindness and sacrifice. • Understand that whimsical decisions may prove disastrous. • Judge the consequences of sycophancy.

Name of the Chapter	Learning Outcomes
	• Understand that one should not be conceited especially those who are in power. • Understand that subjecting innocent animals to the willfulness of human beings is an injustice.
Notice Writing	• Meaning and layout of Notice Writing. • Format of the draft. • Content and Expression. • Different ways of Notice Writing. • Developing linguistic skills.
Letter To The Editor	• Meaning and layout of Letter to the Editor. • Format of the draft. • Content and Expression. • Different ways of drafting Letter to the Editor. • Developing linguistic skills.
Deep Water (Flamingo)	• Success can be achieved in all endeavors by overcoming our fears through courage, determination, hard work, perseverance and the desire to learn. • Understanding of the fact that childhood fears must never be treated lightly. If they are not tackled properly, they make deep inroads into one's psychology which become hurdles in normal lifestyle. • Learning the art of autobiographical narration.
Keeping Quiet(Flamingo)	• Students understand the need of the hour to maintain peace and harmony. • They correlate the theme of the poem with contemporary background and personal experiences. • They learn that moments of silence break shackles of discrimination, hatred, violence and create an exotic moment of togetherness and sense of humanity. • They understand the necessity of introspection. • They appreciate the poetic beauty.
Journey To The End Of The World (Vistas)	• Develop an interest in travelling to places of natural beauty and thereby the interest in working for a sustainable earth. • Appreciate and empathize with and follow the initiatives taken at national and international levels for a sustainable earth. • Understand the direct impact of carbon emissions which affect the ozone layer • Which in turn melts the polar ice layers? • Understand what is "Students on Ice" programme and explore if possible the possibilities of joining it.

Name of the Chapter	Learning Outcomes
	• Develop the attitude of caring for his/her immediate environment through practices like avoiding plastic, proper segregation and disposal of waste, judicious use of water and power, less use of fossil fuels, etc.
The Enemy(Vistas)	• Humanitarianism is above nationalism and racism • Realization of the ethics of a human being at the time of war through the historical perspective of World War II. • Realization of the dilemma between a man's duty towards the nation and towards his own conscience. • Learning the art of narration through the development of the characters of the story.
Article Writing	• Meaning and layout of Article Writing. • Format of the draft. • Content and Expression. • Different ways of drafting reply to Invitation. • Developing linguistic skills.
The Rattrap(Flamingo)	• Learning of the fairy-tale style of storytelling/writing. • Realizing that every human being has an essential goodness that can be awakened through understanding and love. • Understanding of the metaphorical implication of the rattrap. • Guidance to the students to relate the characteristics of literature to larger cultural and human values.
Indigo(Flamingo)	• They would be able to familiarize themselves with specific background information of Indian independent movement. • They would be able to make connections between similar situations locally where something began casually like Gandhi, went on to change their family and society. • They would also develop their optimistic attitude towards life amidst many struggles. • The learners would unfold their logical thinking skills and understand planning strategy of Gandhi. • They would be able to appreciate the significance renouncing personal comforts for the larger cause of the nation like Gandhi.
Poets And Pancakes(Flamingo)	• 1With the completion of the lesson students will be able to understand the various steps involved in film making. • They develop interest in the different areas of film making like- direction, script writing, music, cinematography, choreography, editing, lyrics writing, dialogue writing, acting, screenplay, mixing etc... • They will be able to appreciate the prose lesson and organize ideas effectively. • They understand and appreciate humor and satire in literature. • Learn to write in a rambling chatty style as learned in the lesson.

Name of the Chapter	Learning Outcomes
On The Face Of It (Vistas)	• Inculcate values like empathy, affection, care and concern, optimism and faith. • Face the challenges of life with a positive approach. • Develop optimistic approach towards life. • Gain insight into the loneliness of physically handicapped. • Accept the things as they are and believe in oneself.
A Thing Of Beauty(Flamingo)	• Students will comprehend the poem and understand the meaning of beauty in different forms. • Students will be able to correlate the poem with contemporary scenario • Students will be able to appreciate the literary beauty of the poem • Students will learn the rhyme scheme and intonation of the poem. • They will learn the poetic devices used in the poem.
A Roadside Stand(Flamingo)	• The students will develop sympathy towards poor people. • They will come to know about the callous nature of the city people. • They will be aware of the existence of human tragedies and fears. • Students will learn the rhyme scheme and intonation of the poem. • They will learn the poetic devices used in the poem.
Job Application	• Meaning and layout of Job Application. • Format of the draft. • Content and Expression. • Different ways of drafting Job Application. • Developing linguistic skills.
The Interview(Flamingo)	Students will be able to:- • Compare different media of communication. • Understand the conversation and the interview pattern. • Understand the art of questioning and answering skills. • Understand that confidence is one of the important ingredients of interview. • Understand the challenges faced by reporters and journalists.
Invitation (Formal & Informal)	Students will be able to know:- • Meaning and layout of Invitation. • Format of the draft. • Content and Expression. • Different ways of drafting Invitation. • Developing linguistic skills.

Name of the Chapter	Learning Outcomes
Reply To Invitation	• Meaning and layout of Reply to Invitation. • Format of the draft. • Content and Expression. • Different ways of drafting reply to Invitation. • Developing linguistic skills.
Going Places(Flamingo)	• The learners will be able to familiarize themselves with specific background information of adolescent and adolescent fantasizing. • They would identify and make connections between similar situations in own life experiences where each of us suffers dreams which are not rooted to the ground of common sense and tend to be exotic, glamorous and sophisticated.
Memories Of Childhood (Vistas)	• Understand and appreciate autobiography as a genre of literature. • Encourage the students to perceive reading as an enjoyable experience. • Familiarize students with the universal concept of discrimination on the basis of caste/ nationality/ religion/ gender. • Understand the biographical accounts of women from the marginalized societies. • Understand the common factors, the hardships and the indignations suffered by the writers as they grew up in societies where the ideals of justice, equality and liberty were words found only in textbooks.
Aunt Jennifer's Tigers(Flamingo)	• Appreciate poetry and read aloud with proper intonation. • Comprehend and appreciate the feminist aspects portrayed in the poem. • Empathies with harassed women. • Use the lexical items contextually. • Critically examine the theme of the poem. • Identify the different poetic devices used.
Report Writing	• The meaning of report writing. • Types of Report Writing. • Format of the draft. • Content and Expression. • Linguistic development.

Subject – Physics

Prescribe Books:-

1. Text Book for Class XII Part – I: NCERT
2. Text Book for Class XII Part – II: NCERT
3. Reference New Simplified Physics Part – I, Dhanpat Rai
4. Reference New Simplified Physics Part – II, Dhanpat Rai

(A) Blueprint

(i) Post Summer Test –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Chapter-1: Electric charges and fields	5	2	1	0	1	17
Chapter-2: Electrostatic potential and capacitance	3	2	3	1	--	18
Total	**8 (1)**	**4 (2)**	**4 (3)**	**1 (4)**	**1 (5)**	**35**

(ii) Pre-Boards I –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Chapter-1: Electric charges and fields	1	--	--	--	1(OR)	6
Chapter-2:Electrostatic potential and capacitance	2	--	--	--	--	2
Chapter-3: Current electricity	2	1	2	--	--	10
Chapter-4: Moving charges and magnetism	3	--	1(OR)	--	--	6
Chapter-5: Magnetism and matter	--	--	--	1	--	4
Chapter-6: Electromagnetic induction	2	1	1	--	--	7
Chapter-7: Alternating current	1	--	--	--	1(OR)	6
Chapter-8: Electromagnetic waves	1	1	--	--	--	3
Chapter-9: Ray optics and optical instruments	2	1(OR)	1	--	1(OR)	12
Chapter-10: Wave optics	1	1	1	--	--	6
Chapter-11: Dual nature of radiation and matter	1	--	1	1	--	8
Total	**16 (1)**	**5 (2)**	**7 (3)**	**2 (4)**	**3 (5)**	**70**

Internal choices must be given from the same unit only. Case-Based questions should contain one internal choice within itself.

(iii) Pre-Boards II –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Chapter-1: Electric charges and fields	1	--	--	--	1(OR)	6
Chapter-2: Electrostatic potential and capacitance	2	--	--	--	--	2
Chapter-3: Current electricity	--	1	2	--	--	8
Chapter-4: Moving charges and magnetism	1	--	1(OR)	--	--	4
chapter-5: Magnetism and matter	2	--	--	--	--	2
Chapter-6: Electromagnetic induction	2	--	1	--	--	5
Chapter-7: Alternating current	1	--	--	--	1(OR)	6
Chapter-8: Electromagnetic waves	1	1	--	--	--	3
Chapter-9: Ray optics and optical instruments	2	1(OR)	1	--	1(OR)	12
Chapter-10: Wave optics	1	1	--	--	--	3
Chapter-11: Dual nature of radiation and matter	1	--	--	1	--	5
Chapter-12: Atoms	--	--	1	--	--	3
Chapter-13: Nuclei	2	1	--	--	--	4
Chapter-14: Semiconductor electronics: materials, devices and simple circuits	--	--	1	1	--	7
Total	**16 (1)**	**5 (2)**	**7 (3)**	**2 (4)**	**3 (5)**	**70**

Internal choices must be given from the same unit only. Case-Based questions should contain one internal choice within itself.

(B) Learning Outcomes

Name of the Chapter	Learning Outcomes
Electric Charges and Fields	• Understand the concept of charge. • Learn concept of electrostatic force and field. • State the Coulomb's law of electrostatic force. • Study the electric dipole and electric field due to an electric dipole. • Understand the torque due to an electric dipole. • Explore the concept of electric flux, Gauss's Law and its application.
Electric Potential and Capacitance	• Study the concept potential. • Explore the electric potential and potential gradient and equi-potential surface. • Learn the potential energy. • Understand the concept of capacitor. • Analyze concept of electrostatics to protect themselves from lightning. • Understand the parallel plate capacitors and their uses.

Name of the Chapter	Learning Outcomes
Current electricity	• Understand the concept of electric current and potential difference. • Learn the difference between drift velocity and mobility of electrons in a conductor. • State the Ohm's law and understand the Ohmic conductor. • Understand the concept of electric power, electrical resistivity and conductivity. • Understand the difference between resistance and resistivity. • Study the temperature dependence of resistance/ resistivity of different materials. • Understand the difference between emf and potential difference. • Explore the Kirchhoff's voltage and current law. • Understand principle of Wheatstone bridge.
Magnetic effect of current and Magnetism	• Understand the concept of magnetic field and Oerested's experiment. • Understand the Biot-Savart's law and its application. • Understand the Ampere's law and its application. • Understand the force on a moving charge in uniform magnetic and electric fields. • Understand the force on a current carrying conductor in a uniform magnetic field. • Understand force between two parallel current carrying conductors and definition of ampere. • Understand the torque experienced by a current loop in uniform magnetic field. • Understand the moving coil galvanometer its current sensitivity and conversion to ammeter and voltmeter.
Magnetism and matter	• Understand the concept of bar magnet and magnetic field. • Understand the magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis. • Understand the torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines. • Understand the dia, para and fero magnetic substance.
Electromagnetic induction	• Understand the concept of Electromagnetic induction and induced current. • Understand Faraday's laws and its experiment. • Understand induced emf and Lenz's Law. Self and mutual induction.

Name of the Chapter	Learning Outcomes
Alternating currents	• Understand Peak and rms value of alternating current/ voltage; reactance and impedance. • Understand LCR series circuit. • Understand LCR in resonance condition and its application. • Understand the principle and working of AC generator. • Understand the distribution AC through transformer and the uses of step-up and step-down transformer.
EMW	• Understand the EMW and its spectrum, its uses in our day to day life application.
Ray optics	• Understand the concept of reflection of light, spherical mirrors, mirror formula. • Understand the Refraction of light, total internal reflection. • State the laws of reflection and refraction. • Understand the refraction at spherical surfaces, lenses and thin lens formula. • Understand the magnification, power of a lens, combination of thin lenses in contact. • Understand the Refraction of light through a prism. • Understand the microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.
Wave Optics	• Understand the concept of laws of reflection and refraction using wave phenomena. • Understand Huygen's principle. Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. • Understand the concept of diffraction due to a single slit and width of central maximum.
Dual nature of matter	• Understand the concept of photoelectric effect. • Understand the concept of threshold Frequency. • Understand the experimental review of photoelectric effect. • Understand the Einstein’s photoelectric equation. • Understand the concept of dual nature.
Atom	• Understand the concept of Alpha-particle scattering experiment • Understand the concept of Rutherford’s model of atom; Bohr model, energy levels, hydrogen spectrum.
Nuclei	• Understand the concept of Composition and size of nucleus, atomic masses, isotopes, isobars; isotones. • Understand the concept of Mass-energy relation, mass defect; binding energy per nucleon.

Name of the Chapter	Learning Outcomes
Semiconductor electronics: Materials, devices and simple circuits	• Understand the energy band concept and energy gaps in conductor, semiconductor and insulator • Understand the n type and p type semiconductor • Understand the diode and its principle. • Understand the semiconductor diode, I-V characteristics in forward and reverse bias, diode as a rectifier; I-V characteristics of LED, solar cell and photodiode.

Subject – Chemistry

Prescribe Books:-

1. Text Book for Class XII: Pradeep's New course Chemistry, Pradeep publications India.
2. Text Book for Class XII: Companion Chemistry, S.Dinesh and co. Sister concern of S. Vinesh and Co.
3. Test Book for Class XII: New Era Chemistry (G.R. Bathla Publications)

(A) Blueprint

(i) Post Summer Test –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Haloalkanes and Haloarenes	8	3	4	1	1	35
Total	**8 (1)**	**3 (2)**	**4 (3)**	**1 (4)**	**1 (5)**	**35**

(ii) Pre-Boards I –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Solution	2	1	1	--	--	7
Electro Chemistry	1	--	1	--	1	9
Chemical Kinetics	2	1	1	--	--	7
-D & f-block Elements	2	--	--	--	1	7
Coordination Compounds	1	1	--	1	--	7
Haloalkanes & Haloarenes	1	1	1	--	--	6
Alcohols, Phenols & Ethers	1	1	1	--	--	6
Aldehydes, Ketones and Carboxylic Acid	3	--	--	--	1	8
Amines	3	--	1	--	--	6
Biomolecules	--	--	1	1	--	7
Total	**16 (1)**	**5 (2)**	**7 (3)**	**2 (4)**	**3 (5)**	**70**

(iii) Pre-Boards II –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Solution	2	1	1	--	--	7
Electro Chemistry	1	--	1	--	1	9
Chemical Kinetics	2	1	1	--	--	7
-D & f-block Elements	2	--	--	--	1	7
Coordination Compounds	1	1	--	1	--	7
Haloalkanes & Haloarenes	1	1	1	--	--	6
Alcohols, Phenols & Ethers	1	1	1	--	--	6
Aldehydes, Ketones and Carboxylic Acid	3	--	--	--	1	8
Amines	3	--	1	--	--	6
Biomolecules	--	--	1	1	--	7
Total	**16 (1)**	**5 (2)**	**7 (3)**	**2 (4)**	**3 (5)**	**70**

(B) Learning Outcomes

Name of the Chapter	Learning Outcomes
Solution	• Describe the formation of different types of solutions. • Express the concentration of the solution in different units. • Correlate Henry's law and Raoult's law. • Compare ideal and non-ideal solutions. • Explain deviations of real solutions from Raoult's law. • Describe the colligative properties of solutions and correlate them with molar masses of solutes. • Explain abnormal colligative properties exhibited by some solutes in solutions. • Solve numerical using Vant's Hoff factor and calculate the degree of dissociation and association. • Compare isotonic, hypertonic, and hypotonic Solutions and their importance.
Electrochemistry	• Describe an electrochemical cell and differentiate between galvanic and electrolytic cells. • Represent the cell, write half-cell reactions and calculate the emf of the cell (E°cell). • Apply the Nernst equation for calculating the emf of galvanic cells and define the standard potential of the cell. • Derive the relation between the standard potential of the cell, Gibb's energy of cell reaction and its equilibrium constant. • Define resistivity, conductivity, and molar conductivity of ionic solutions.

Name of the Chapter	Learning Outcomes
	• Differentiate between electrolytic and electronic conductivity. • Describe the methods for measurement of conductivity of electrolytic solutions and calculation of their molar conductivity. • Justify the variation of conductivity and molar conductivity of solutions with change in their concentration and define molar conductivity at zero concentration. • Enunciate Kohlrausch's law and learn its applications. • Understand the quantitative aspects of electrolysis. • Enlist construction of dry cell, mercury cell(primary cell), secondary cell like nickel-cadmium cell, lead storage battery and fuel cell • Apply knowledge on corrosion of metals in day-to-day life.
Chemical Kinetics	• Define the rate of reaction and compare between average & instantaneous reaction. • Know the rate of reaction in terms of the disappearance of reactant & appearance of the product. • Enlist the factors affecting the rate of reaction and the mechanism by which the reactions proceed. • Write the rate of reaction in the form of change in concentration of reactants or products. • Compare elementary and complex reactions. • Compare the molecularity and order of a reaction. • Describe the rate constant. • Explain the dependence of the rate of reaction on concentration, temperature and catalyst. • Demonstrate integrated rate equation for zero and first-order reaction and solve numerical based on these & plot graph. • Enlist activation energy, collision theory, and Arrhenius equation and apply it in numerical and plot graph
d & f-Block elements	• Learn the position of the d- and f-block elements in the periodic table and their electronic configuration. • Analyse the variation of atomic size, I.E, electrode potential, melting and boiling point, high enthalpy of atomisation, formation of coloured ions, paramagnetism, alloy & interstitial compound, complex formation, catalytic • Properties, oxides and halides of transition metals. • Appreciate the relative stability of various oxidation states in terms of electrode potential values. • Describe the preparation, properties, structures and uses of some important compounds such as $K_2Cr_2O_7$ and $KMnO_4$. • Understand the general characteristics of the d-and f-block elements. • Describe the properties of the f-block elements and give a comparative account of the lanthanoids and actinoidsconcerning their electronic configurations oxidation states and chemical behaviour.

Name of the Chapter	Learning Outcomes
Co-ordination Compounds	• Appreciate the postulates of Werner's theory of coordination compounds. • Know the meaning of the important terms used in coordination compounds. • Learn the rules of nomenclature of coordination compounds. • Write the formulas and names of mononuclear coordination compounds. • Define different types of isomerism in coordination compounds. • Understand the nature of bonding in coordination compounds in terms of the Valence Bond and Crystal Field theories. • Analyse the stability of complex compounds & colour of the complex. • Appreciate the importance and applications of coordination compounds in our day-to-day life.
Haloalkanes & Haloarenes	• Classify the haloalkanes and haloarenesas primary, secondary or tertiary and also alkyl halides, allylic halides, benzylic halides, vinylic halides and aryl halides with examples. • Name haloalkanes and haloarenes according to the IUPAC system. • Describe the reactions involved in the preparation of haloalkanes and haloarenes and understand the various reactions that they undergo. • Correlate the structures of haloalkanes and haloarenes with various types of reactions. • Use stereochemistry as a tool for understanding the reaction mechanism. • Appreciate the applications of organometallic compounds. • Highlight the environmental effects of polyhalogen compounds.
Alcohols, Phenols & Ethers	• Enlist the different types of alcohols such as primary, secondary and tertiary alcohols. • Name alcohols, phenols and ethers. and according to the IUPAC system. • Discuss the reactions involved in the preparation of alcohol. • Discuss the reactions for the preparation of phenols. • Discuss the reactions for the preparation of ethers. • Correlate the physical properties of alcohols, phenols, and ethers with their structure. • Correlate some commercial importance of alcohol. • Discuss the chemical reactions of the three classes of compounds based on their functional groups. • Demonstrate and differentiate between alcohol and phenolbased on suitable chemical tests.

Name of the Chapter	Learning Outcomes
Aldehydes, Ketones & Carboxylic Acids	• Write the common and IUPAC names and structures of aldehydes, ketones and carboxylic acids. • Draw and identify the structures of the compounds containing functional groups namely carbonyl and carboxyl groups. • Know about various methods of preparation of aldehydes, ketones and carboxylic acids. • Correlate physical properties and chemical reactions of aldehydes, ketones and carboxylic acids, with their structures. • Understand the various factors affecting the acidity of carboxylic acids and their reactions. • Describe the uses of aldehydes, ketones and carboxylic acids.
Amines	• Describe amines as derivatives of ammonia having a pyramidal structure. • Classify amines as primary, secondary and tertiary. • Analyse the basic ideas about how to write the common and IUPAC names of amines. • Know about various methods of preparation of amines. • Compare the properties of different types of amines. • Distinguish between primary, secondary and tertiary amines. • Describe the method of preparation of diazonium salts and their importance in the synthesis of a series of aromatic compounds including azo dyes.
Biomolecules	• Define the biomolecules like carbohydrates, proteinsand nucleic acids. • Classify carbohydrates, proteins, amino acids, nucleic acids, and vitamins based on their structures. • Differentiate between the primary, secondary and tertiary structures of proteins. • Explain the difference between DNA and RNA. • Define nucleotide, nucleoside. • Appreciate the role of biomolecules in biosystems.

Subject – Mathematics

Prescribe Books:-

1. Text Book for Class XII: NCERT
2. Exemplar Problems for Class XII: NCERT
3. R.D.Sharma Class XII

(A) Blueprint

(i) Post Summer Test –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Relation and functions	3	2	--	--	1	12
Inverse Trigonometric functions	3	1	1	--	--	8
Matrices	2	--	1	1	--	9
Determinants	2	2	--	--	1	11
Total	**10 (1)**	**5 (2)**	**2 (3)**	**1 (4)**	**2 (5)**	**40**

(ii) Pre-Boards I –

Units	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
I. Relation and functions	2	1	1	--	1	12
II. Algebra	6	--	1	--	1	14
III. Calculus	6	4	4	2	1	39
IV. Vectors and Three Dimensional Geometry	6	--	--	1	1	15
Total	**20 (1)**	**5 (2)**	**6 (3)**	**3 (4)**	**4 (5)**	**80**

(iii) Pre-Boards II –

Units	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
I. Relation and functions	1	1	--	--	1	8
II. Algebra	5	--	--	--	1	10
III. Calculus	6	4	4	1	1	35
IV. Vectors and Three Dimensional Geometry	5	--	--	1	1	14
V. Linear Programming Problems	2	--	1	--	--	5
VI. Probability	1	--	1	1	--	8
Total	**20 (1)**	**5 (2)**	**6 (3)**	**3 (4)**	**4 (5)**	**80**

(B) Learning Outcomes

Name of the Chapter	Learning Outcomes
Chapter – 01 (Relations and Functions)	• Students will be able to learn different types of relations. • Students will be able to learn about finding equivalence class related to a given relation. • Students will be able to learn about different types of functions.
Chapter – 02 (Inverse Trigonometric Functions)	• Students will be able to learn about finding the principal value branch of an Inverse Trigonometric Function • Students will be able to learn about drawing the graph of Inverse Trigonometric Functions • Students will be able to learn about reducing the Inverse Trigonometric Functions in the simplest form.
Chapter – 03 (Matrices)	• Students will learn about finding the order of a given matrix. • Students will learn about different types of matrices. • Students will learn about the equality of matrices. • Students will learn about the multiplication of a matrix by a scalar. • Students will learn about the transpose of a matrix. • Students will learn the Addition of matrices and multiplication of matrices, properties, and applications. • Students will learn about the Symmetric, skew-symmetric matrix. • Students will be able to learn about invertible matrix.
Chapter – 04 (Determinants)	• Students will learn, about Determinants and its expansion. • Students will learn, the area of the triangle using determinants • Students will learn, Minor and Cofactor of an element of a determinant. • Students will learn, Adjoint and Inverse of a Matrix. • Students will learn, how to solve system of linear equations using Matrices and Determinants.
Chapter – 05 (Continuity and Differentiability)	• Students will be able to learn about the continuity of a function. • Students will learn algebra of continuous functions. • Students will learn about differentiability. • Students will able to find derivative of composite functions, implicit functions. • Students will able to find derivative of trigonometric functions, inverse trigonometric functions. • Students will able to find derivative of logarithmic and exponential functions. • Students will learn about finding derivative of functions in parametric form. • Students will able to find second order derivative.

Name of the Chapter	Learning Outcomes
Chapter – 06 (Applications of Derivatives)	• Students will learn about, how to find rate change of one quantity with respect to other quantity. • Students will learn about, how to check whether a given function is increasing or decreasing or neither on the given interval. • Students will learn about, finding Maxima and minima of a function, absolute maximum and minimum value of a function using first and second derivative and its application in day-to-day life.
Chapter – 07 (Integrals)	• Students will be able understand the concept of indefinite integral as anti-derivative. • Students will be able to know standard indefinite integrals and basic rules of indefinite integration. • Students will be able to evaluate indefinite integrals by different methods. • Students will be able to Use the Fundamental Theorem of Calculus to evaluate definite integrals. • Students will able to understand the concept of definite integral and know the basic properties of definite integrals. • Students will able to Use definite integrals to solve application problems.
Chapter – 08 (Applications of the Integrals)	• Students will be able to find area under a plane curve and the x-axis. • Students will be able to find area under a plane curve and the y-axis. • Students will be able to learn how to find the area of a region bounded by a curve and a line. • Students will be able to find the area of a triangle.
Chapter – 09 (Differential Equations)	• Students will study some basic concepts related to the differential equation. • Students will be able to learn about the general and particular solution of a differential equation. • Students will be able to know some methods to solve a first order-first degree differential equation. • Students will be able to know some applications of differential equations in different areas.
Chapter – 10 (Vectors)	• Students will be able to learn about the mathematical concept of vectors. • Students will be able to learn about different types of vectors. • Students will be able to learn about addition of vectors and its properties.

Name of the Chapter	Learning Outcomes
	• Students will able to find DCS and DRS of a vector and to solve questions related to them. • Students will able to find scalar product of two vectors. • Students will able to find vector product of two vectors
Chapter – 11 (Three-Dimensional Geometry)	• Students will be able to learn the concept of direction cosines and direction ratios of a line. • Students will be able to learn how to find direction cosines of a line when the direction ratios are given. • Students will able to find the equation of line in vector and cartesian forms under different conditions. • Students will be able to learn how to find angle between two lines. • Students will able to find shortest distance between two given lines and coplanarity of two lines..
Chapter – 12 (Linear Programming)	• Students will be able to learn about representing the linear programming problems in mathematical formulation. • Students will be able to learn about the graphical solution of the linear programming problems when feasible region is bounded. • Students will be able to learn about the graphical solution of the linear programming problems when feasible region is unbounded.
Chapter – 13 (Probability)	• Students will learn about conditional probability and its results. • Students will learn about independent events and how to check for independent events. • Students will learn about multiplication theorem of Probability and questions based on these. • Students will learn about theorem of Total Probability and its extension to Bayes' Theorem followed by applications • Students will learn about Probability Distribution, terms related to these and its applications in different situations. • Students will learn to find mean of Random variables

Subject – Biology

Prescribe Books:-

1. Biology - Text Book for Class XII: NCERT
2. Biology - Exemplar for Class XII: NCERT

(A) Blueprint

(i) Post Summer Test –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Chapter-2: Sexual reproduction in flowering plants	4	2	1	--	1	16
Chapter-3 Human reproduction	4	1	1(OR)	--	OR	9
Chapter-4 Reproductive health	1	1(OR)	1	1	--	10
Total	**9 (1)**	**4 (2)**	**3 (3)**	**1 (4)**	**1 (5)**	**35**

(ii) Pre-Boards I –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Chapter – 2 Sexual Reproduction in Flowering Plants	2	--	1	1	OR	9
Chapter – 3 Human Reproduction	2	--	--	--	1	7
Chapter – 4 Reproductive Health	2	1	--	--	--	4
Chapter – 5 Principles of Inheritance and Variation	2	1	2	--	1	15
Chapter – 6 Molecular Basis of Inheritance	1	1(OR)	--	--	OR	8
Chapter – 7 Evolution	1	--	2	--	--	7
Chapter-8 Human Health and Diseases	3	--	1 (OR)	--	--	6
Chapter-10 Microbes in Human Welfare	2	1	--	1	--	8
Chapter-11 Biotechnology-Principles and Processes	1	1	1	--	1(OR)	11
Total	**16 (1)**	**5 (2)**	**7 (3)**	**2 (4)**	**3 (5)**	**70 (75)**

(iii) Pre-Boards II –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Chapter – 2 Sexual Reproduction in Flowering Plants	1	1	--	--	1	8
Chapter – 3 Human Reproduction	1	--	1	--	OR	4
Chapter – 4 Reproductive Health	1	--	1	--	--	4
Chapter – 5 Principles of Inheritance and Variation	--	--	--	1	1	9
Chapter – 6 Molecular Basis of Inheritance	3	--	1	--	(OR)	6
Chapter – 7 Evolution	2	--	1(OR)	--	--	5
Chapter-8 Human Health and Diseases	2	--	1	1	--	9
Chapter-9 Microbes in Human Welfare	1	1	1	--	--	6
Chapter-11 Biotechnology-Principles and Processes	--	1	--	--	1	7
Chapter-12 Biotechnology and its Applications	--	--	1	--	OR	3
Chapter13 Organism and Population	3	--	--	--	--	3
Chapter-14 Ecosystem	--	1(OR)	--	--	--	2
Chapter-15 Biodiversity and Conservation	2	1	--	--	--	4
Total	**16 (1)**	**5 (2)**	**7 (3)**	**2 (4)**	**3 (5)**	**70**

(B) Learning Outcomes

Name of the Chapter	Learning Outcomes
Sexual Reproduction of the Flowering Plant.	Students will able to ● Know the structure & function of the floral parts including: Sepal, petal, stamen, and carpel. ● Define the terms: pollination, self-pollination, cross-pollination, fertilization. ● Explain various techniques of out breeding devices. ● Draw the seeds structure and explain function of following: testa, plumule, radicle, embryo, cotyledon ● Explain development of embryo and seed. ● Explain about fruit formation fruit production. ● Define the term dormancy. State advantages of dormancy. ● Explain importance of apospory for hybrid seed production. ● Draw well labelled diagrams of mega sporangium, microsporangium ● Explain various stages of mega and microsporogenesis, development of embryo and structure of seed.

Name of the Chapter	Learning Outcomes
Reproduction In Human	Students will able to ● Explain the events of human reproduction. ● Describe male and female reproductive system. ● Draw the structure of male and female reproductive system. ● Explain spermatogenesis and oogenesis. ● Draw the structure of sperm and ova. ● Explain and understand about menstrual cycle. ● List the function of testis and ovary. ● Explain the role of progesterone and testosterone. ● Explain embryonic development and in human. ● Describe about parturition and lactation.
Reproductive Health	Students will able to ● Define reproductive health. ● Know about the problems associated with reproductive health. ● Discuss how the reproductive health related problems can be overcome. ● Know how to rationalize the use of amniocentesis. ● Explain the reasons for population explosion, ● Interprets the relation between MMR, IMR and population explosion. ● Understand the need of contraception in the controlling population explosion and in staying away from sexually transmitted disease(STD) ● Identify various contraceptive methods, their use, advantage and their side effects. ● Understand the role and need of MTP (Medical termination of Pregnancy) and advocate for MTP. ● Know about the cause and method of cure and how to prevent STDs. ● Understand the reasons of infertility. ● Aware of different assisted reproductive technology (ART) for childless couple and their need for the society.
Principles of Inheritance and Variation	Students will able to ● Know Mendel's experimental design. ● Understand the difference between dominant and recessive and the difference between homozygous and heterozygous ● Know the use of Punnet squares ● Application of testcross. ● Know about Mendelian Laws, Monohybrid, Dihybrid crosses. ● Know about genes influence on traits ● Explain non-mendelian inheritance, Continuous variance. Pleiotropic effects, Co dominance

Name of the Chapter	Learning Outcomes
	• Explain theory of Chromosomal Inheritance and Sex-linked traits • Applications of Pedigrees • Do different monohybrid and dihybrid corss
Molecular Basis of Inheretance	Students will able to • Know about DNA, RNA, Replication, Transcription, Genetic code, Translation, Regulation of gene expression. • Differentiate between transcription and translation, between axon and intron, m-RNA and tRNA etc • Explain transcription, translation, gene regulation. • Prepare the model of DNA, RNA, Nucleotide, Nucleoside etc • They can apply this knowledge in their higher study.
Evolution	Students will able to • Learn the concept on various theories of evolution • Know about evolution and its patterns. • Apply strategies of Hardy Weinberg principle. • Know the evolution of plants and animals. • Understand the mechanisms of evolution and its significance.
Human Health and Disease	Students will able to • Differentiate between infectious and non infectious disease • Know about common diseases and their symptoms • Explain about malarial life cycle • Explain types of immunity with their sub-divisions • Understand about vaccination and immunization
Microbes in Human Welfare	Students will able to • Define fermentation and antibiotic. • Know the importance of microbes in our daily life. • Explain the role of the microbes in industries and sewage treatment. • Describe the process of biogas production. • List out the name of microbes that help in nitrogen fixation. • Explain the function of cyclosporine A, Statins and Streptokinase. • Know the importance BGA in agriculture. • Explain the role of baculoviruses as biological control agent. • Define floc. • Describe the harmful effects of chemical pesticides. • Apply their knowledge in day today life.
Biotechnology Principle and Processes	Students will able to • Know the principle of biotechnology and tools of recombinant DNA technology • Differentiate between DNA and Recombinant DNA and between sparged and stirred tank bioreactor.

Name of the Chapter	Learning Outcomes
	● Explain the use of selectable marker for selection of recombinant cells. ● Explain recombinant DNA technology and its use in their higher study
Biotechnology and its Applications	Students will able to ● Understand the biotechnological applications in agriculture, medicine, transgenic animals and ethical issues. ● Understand mechanism of developing Bt. Cotton, RNA interference
Organisms and Populations	Students will able to ● Explain use of ecological principles ● Explain the consequences of human activity current economic and social issues. ● Apply mathematical or conceptual model to population or community dynamics.
Ecosystem	Students will able to ● Define the terms biotic, abiotic components, productivity, decomposition, energy flow, nutrient recycling, detritus, humification, mineralization, standing crop, ecological succession etc. ● Explain that free flow of solar energy is required to support ecosystem dynamics. ● Predict the changes in biotic community of a given abiotic environment. ● Analyze the data to reach conclusion that flow of energy in an ecosystem is different from flow of matter. ● Apply mathematical principles to compare and draw conclusion about different ecological pyramids and net productivity. ● Explain different steps in decomposition. ● Connect concepts of flow of energy through food chain and food web.
Biodiversity And Conservation	Students will able to ● Learn the basic concepts about the interrelation and co relation of the individual in an ecosystem. ● Explain the importance of bio diversity for the existence of the entre life on the earth. ● Explain the relationship between individuals in terms of food and transfer of energy. ● Explain soil structure, soil erosion, soil moisture, etc. ● Know that the change of physical factors of the climate of a particular area is determined directly by bio diversity of that area.

Name of the Chapter	Learning Outcomes
	• Understand that biodiversity help us to provide food of various kinds. • Apply their knowledge in the Zoo and Botanical garden. • Analyze the data collected from this source to identify the relationship. • Apply the knowledge in day to day life.

Subject – Computer Science

Prescribe Books:-

1. Computer Science with Python – Sumita Arora, DHANPAT RAI & CO. (Pvt) Limited, Educational & Technical Publishers.

(A) Blueprint

(i) Post Summer Test –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Python Revision Tour	3	6	--	--	--	15
Working with Function	8	5	--	--	--	18
Python Libraries	--	1	--	--	--	2
Total	**11 (1)**	**12 (2)**	**--**	**--**	**--**	**35**

(ii) Pre-Boards I –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Python Revision Tour	7	7	--	--	--	21
Working with Function	4	3	--	--	--	10
Python Libraries	2	--	--	--	--	2
Exception Handling	1	--	--	--	--	1
File Handling	1	2	1	1	1	17
Database Concepts	3	--	--	--	--	3
SQL + Interactive python with MYSQL	1	--	2	1	1	16
Total	**19 (1)**	**12 (2)**	**3 (3)**	**2 (4)**	**2 (5)**	**70**

(iii) Pre-Boards II –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Python Revision Tour	6	1	1	--	--	11
Working with Function	1	3	--	--	--	7
Python Libraries	2	--	--	--	--	2
Exception Handling	1	--	--	--	--	1
File Handling	1	2	1	1	1	17
Database Concepts	3	--	--	--	--	3
SQL + Interactive python with MYSQL	1	--	2	1	1	16
Data Structure	--	--	1	--	--	3
Communication & Network	3	1	--	--	1	10
Total	**18 (1)**	**7 (2)**	**5 (3)**	**2 (4)**	**3 (5)**	**70**

(B) Learning Outcomes

Name of the Chapter	Learning Outcomes
Python Revision Tour	After studying this Chapter, the Students will be able to: ● Understand the concepts of Tokens ● Work with Operators and Expressions ● Explore the concepts of Selection Statements (if Statements) ● Work with range( ) function ● Write Programs using Looping Control Statements (for and while) ● Work with string slices ● Know different string Functions and Methods ● Handle in Creating and Accessing Lists ● Work with nested Lists ● Understand different List Functions and Methods ● Handle in Creating and Accessing Tuples ● Develop the concepts of different Tuple Functions and Methods ● Work with nested Tuples ● Work with Key: Value Pairs of a Dictionary ● Handle in Creating and Accessing Dictionary ● Develop the concepts of writing programs using Dictionary Functions and Methods
Working with Function	After studying this Chapter, the Students will be able to: ● The basics of Function ● Learn the concepts on Flow of Execution in a function call ● Emphasis on passing parameters in function ● Understand the importance of returning and no-returning a value from a function

Name of the Chapter	Learning Outcomes
	● Acquainted with the scope of variables in function ● Write programs based on mutable/immutable properties of passed data objects on function calls
Python Libraries	After studying this Chapter, the Students will be able to: ● Learn the concepts on Library module ● Write Programs on importing modules in a Python Program. ● Work on standard library functions and modules in a Python Program. ● Focus on working with the random module
Exception Handling	After studying this Chapter, the Students will be able to: ● Deal with the errors using Exception ● Handle exceptions using try-except-finally blocks
File Handling	After studying this Chapter, the Students will be able to: ● Learn concepts on Data Files ● Collect Information on Opening/closing files ● Develop the concepts on various ways of working with text files ● Work on standard input/output/error streams ● Explore the concepts on different ways of working with Binary Files ● Conversant with the concepts of CSV Files
Database Concepts	After studying this Chapter, the Students will be able to: ● Focus On The Concepts on Database. ● Collect information on various sub concepts of Relational data Model such as relation, attribute, tuple, domain, degree, cardinality and keys etc.
SQL (SQL+Interactive python with MYSQL)	After studying this Chapter, the Students will be able to: ● Work with database terminologies used in SQL ● Collect information on data type such as (char(n), varchar(n), int, float, date), ● Deal with constraints, database commands & table commands ● Work with various operators and aggregate functions used in group by, having clause, ● Focus on joins such as cartesian product on two tables, equi-join and natural join ● Conversant with the Interface of python with an SQL database ● Display data by using connect(), cursor(), execute(), commit(), fetchone(), fetchall(), rowcount, ● Create database connectivity applications ● Use %s format specifier or format() to perform queries

Name of the Chapter	Learning Outcomes
Data Structure	After studying this Chapter, the Students will be able to: ● Focus On STACK. Concepts. ● Work with various STACK operations ● Implement the STACK using LIST
Computer Networks	After studying this Chapter, the Students will be able to: ● Learn the concepts on Evolution of Networking. ● Collect information on Data communication terminologies & switching techniques ● Focus on the transmission media ● Conversant with the Network devices used in Networking ● Explore on Network topologies and Network types ● Deal with Network protocols such as HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP ● Handle with the Introduction to web services such as HTML, XML, URL, DOMAIN etc. ● Design a Good Network Architecture

Subject – Physical Education

Prescribe Books:-

1. Health and Physical Education, Saraswati Publication. Author – Dr. V.K,Sharma.

(A) Blueprint

(i) Post Summer Test –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Management of Sporting Events	4	1	1	1	1	18
Children and Women in Sports.	3	1	1	1	1	17
Total	**7 (1)**	**2 (2)**	**2 (3)**	**2 (4)**	**2 (5)**	**35**

(ii) Pre-Boards I –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Management of Sporting Events	--	--	--	1	1	9
Children and Women in Sports.	4	1	1	--	--	9
Yoga as preventive measure for lifestyle disease	2	1	1	--	1	12
Physical Education and Sports for CWSN	4	1	--	1	--	10
Sports and Nutrition	4	--	1	--	1	12

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Test and Measurement in Sports	1	1	1	1	--	10
Physiology and Injuries in Sports.	3	1	1	--	--	8
Total	**18 (1)**	**5 (2)**	**5 (3)**	**3 (4)**	**3 (5)**	**70**

(iii) Pre-Boards II –

Chapters	Mark Distribution					
	1 Mark	2 Marks	3 Marks	4 Marks	5 Marks	Total
Management of Sporting Events	2	--	1	1	--	9
Children and Women in Sports.	3	1	--	--	--	5
Yoga as preventive measure for lifestyle disease	1	--	--	--	1	6
Physical education and Sports for CWSN	1	--	1	1	--	8
Sports and Nutrition	2	1	1	--	--	7
Test and Measurement in Sports	1	1	--	--	1	8
Physiology and Injuries in Sports.	3	1	1	--	--	8
Biomechanics and Sports	1	--	--	1	--	5
Psychology and Sports	3	--	1	--	--	6
Training in Sports	1	1	--	--	1	8
Total	**18 (1)**	**5 (2)**	**5 (3)**	**3 (4)**	**3 (5)**	**70**

(B) Learning Outcomes

Name of the Chapter	Learning Outcomes
Management of Sporting Events	Students will be able to: ● To know and apply the organizational principles of sports event. ● To understand and put aspects of the financial management of a sport event into practice. ● To obtain and align available resources for a sport event. ● Learn about difference Intramural and Extramural competition. ● Students will be able to know about community sports purpose and benefits.
Children and Women in Sports.	At the end children will be able to: ● Learn the exercises for the development of children at different stages. ● Learn about the common postural deformities and their corrective measures. ● Recognize the role and importance of sports participation of women in India. ● Identify special consideration relate to menarche and menstrual dysfunction. ● Learn about Female Athlete Triad.

Name of the Chapter	Learning Outcomes
Yoga as preventive measure for lifestyle disease	Students will be able to: ● Students will learn about the benefits of asanas ● Identify the asanas beneficial for different types of ailments and health problems. ● Recognize importance of various asanas for preventive measures of obesity, diabetes, asthma, hypertension, back pain. ● Describe the procedure, benefits and contraindications for performing various asanas.
Physical Education and Sports for CWSN	Children will able to: ● Appreciate advantages of physical activities for children with special needs. ● Differentiate between methods of categorization in sports for CWSN. ● Understand concepts and importance of inclusion in sports. ● Create advantages for children with special needs through physical activities. ● Strategies physical activities accessible for children with special needs.
Sports and Nutrition	Students will be able to: ● Understand the concept of balanced diet and nutrition ● Classify Nutritive and non-nutritive components of diet ● Identify the ways to maintain healthy weight. ● Know about foods commonly causing food intolerance ● Recognize the pitfalls of dieting and food myths. ● Understand the importance of nutrition in sports. ● Comprehend the dietary requirements in pre, during and post-competitions.
Test and Measurement in Sports	At the end students will be able to: ● Perform SAI Khelo India Fitness Test in school (Age group 5 to 8 years/ 9 to 18 years). ● Compute Basal Metabolic Rate (BMR) ● Determine physical fitness index to Harvard Step Test/ Rock-port Test. ● Describe the procedure of Rikli and Jones- Senior Citizen Fitness Test. ● Johnsen-Methney Test of Motor Educability.
Physiology and Injuries in Sports.	At the end students will be able to: ● Recognize the physiological factors determining the components of physical fitness. ● Comprehend the effects of exercise on Muscular system. ● Know the effects of exercise on cardio-respiratory system. ● Figure out the physiological changes due to ageing. ● Indentify and classify sports injuries.

Name of the Chapter	Learning Outcomes
Biomechanics and Sports	Students will be able to: ● Understand Newton's law of motion and its application in sports. ● Recognize the concept of Equilibrium and its application in sports. ● Classify lever and its application in sports. ● Know about the Centre of Gravity and will be able to apply it in sports. ● Define Friction and its application in sports. ● Understand the concept of Projectile in sports.
Psychology and Sports	Students will be able to: ● Classify different types of personality and its relationship with sport performance. ● Recognize concept of motivation and identify various types of motivation. ● Identify various reasons to exercise, its associated benefits and strategies to promote exercise adherence. ● Differentiate between different types of aggression in sports. ● Explain various psychological attribute in sports.
Training in Sports	Students will be able to: ● Understand the concept of talent identification and methods used for talent development in sports. ● Understand sports training and the different cycle used in the training process. ● Understand different types and methods to develop strength, endurance, and speed in sports training. ● Understand different types and methods to develop flexibility and coordinative ability. ● Understand circuit training and its importance.

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