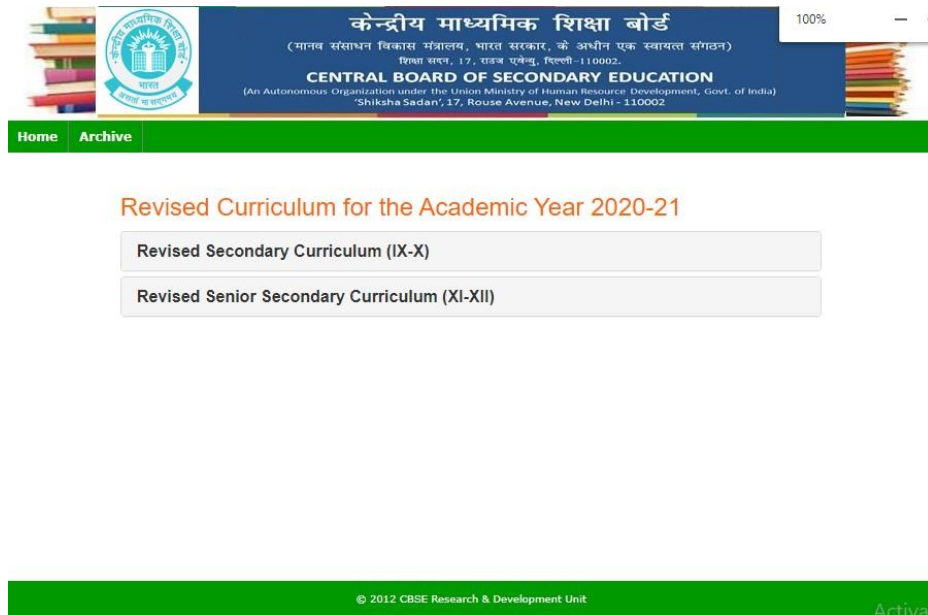


# KENDRIAY VIDYALAYA AFS NALIYA

## DELETED PORTION FOR SESSION 2020-21

Link :- [http://cbseacademic.nic.in/revisedcurriculum\\_2021.html](http://cbseacademic.nic.in/revisedcurriculum_2021.html)



The screenshot displays the official website of the Central Board of Secondary Education (CBSE). The header features the board's logo and name in Hindi and English, along with its address in New Delhi. Below the header, a green navigation bar contains links for 'Home' and 'Archive'. The main content area is titled 'Revised Curriculum for the Academic Year 2020-21' and lists two options: 'Revised Secondary Curriculum (IX-X)' and 'Revised Senior Secondary Curriculum (XI-XII)'. The footer includes the copyright notice '© 2012 CBSE Research & Development Unit' and a partially visible 'Activate' button.

## हिंदी (आधार) (कोड सं. 302)

### कक्षा -11वीं (2020-21)

खंड	विषय	अंक
(क)	अपठित अंश	15
1	अपठित गद्यांश – बोध (गद्यांश पर आधारित बोध, प्रयोग, रचनांतरण, शीर्षक आदि पर 10 बहुविकल्पी/अतिलघुत्तरात्मक प्रश्न 1 अंक (1 अंक x 10 प्रश्न)	10
2	अपठित काव्यांश पर आधारित बोध (गद्यांश पर आधारित बोध, प्रयोग, रचनांतरण, शीर्षक आदि पर 5 बहुविकल्पी/अति लघुत्तरात्मक प्रश्न 1 अंक (1 अंक x 5 प्रश्न)	05
(ख)	कार्यालयी हिंदी और रचनात्मक लेखन (‘अभिव्यक्ति और माध्यम’ पुस्तक के आधार पर)	25
3	दी गई स्थिति / घटना के आधार पर रचनात्मक लेखन (विकल्प सहित) (निबंधनात्मक प्रश्न) (5 अंक x 1 प्रश्न)	05
4	औपचारिक/अनौपचारिक पत्र (निबंधनात्मक प्रश्न) (5 अंक x 1 प्रश्न)	05
5	व्यावहारिक लेखन (प्रतिवेदन, प्रेस-विज्ञप्ति, परिपत्र, कार्यसूची/कार्यवृत्त से संबंधित दो लघुउत्तरीय प्रश्न - एक तीन व एक दो अंक का) (विकल्प सहित) (3 अंक x 1 प्रश्न) + (2 अंक x 1 प्रश्न)	05
6	शब्दकोश से संबंधित 5 बहुविकल्पी प्रश्न (1 अंक x 5 प्रश्न)	05
7	जनसंचार माध्यम और पत्रकारिता के विविध आयामों पर से संबंधित दो लघुउत्तरीय प्रश्न-एक तीन व एक दो अंक का) (विकल्प सहित) (3 अंक x 1 प्रश्न) + (2 अंक x 1 प्रश्न)	05
(ग)	पाठ्यपुस्तक	40

	(1)	आरोह भाग-1	30
	(अ)	काव्य भाग	15
	8	किसी एक काव्यांश पर अर्थग्रहण से संबंधित तीन प्रश्न (2 अंक x 3 प्रश्न) (विकल्प सहित)	06
	9	एक काव्यांश के सौंदर्यबोध पर दो लघुउत्तरीय प्रश्न (2 अंक x 2 प्रश्न) (विकल्प सहित)	04
	10	कविताओं की विषयवस्तु पर आधारित दो लघुउत्तरीय-एक तीन व एक दो अंक का (विकल्प सहित) (3 अंक x 1 प्रश्न) + (2 अंक x 1 प्रश्न)	05
	(ब)	गद्य भाग	15
	11	गद्यांश पर आधारित अर्थग्रहण से संबंधित तीन प्रश्न (2 अंक x 3 प्रश्न)	06
	12	पाठों की विषयवस्तु पर आधारित चार में से तीन बोधात्मक प्रश्न (3 अंक x 3 प्रश्न)	09
	(2)	वितान भाग-1	10
	13	पाठों की विषयवस्तु पर आधारित चार लघुउत्तरीय प्रश्न -दो तीन अंकों के व दो-दो अंकों के प्रश्न (विकल्प सहित) (3 अंक x 2 प्रश्न) + (2 अंक x 2 प्रश्न)	10
(घ)	(क)	श्रवण तथा वाचन -10	20
	(ख)	परियोजना – 10	
<b>कुल अंक</b>			<b>100</b>

प्रस्तावित पुस्तकें:

1. आरोह, भाग-1, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित
2. वितान भाग-1, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित
3. अभिव्यक्ति और माध्यम, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित

❖ नोट: निम्नलिखित पाठ हटा दिये गये हैं ।

काव्य खंड	
1.	सत्यजित राय- अपू के साथ ढाई साल
2.	सैयद हैदर रज़ा- आत्मा का ताप
3.	रामनरेश त्रिपाठी- पथिक
4.	बालमुकुंद गुप्त- विदाई संभाषण
5.	मन्नू भंडारी- रजनी
गद्य खंड	
6.	त्रिलोचन- चंपा काले काले अच्छर नहीं चीन्हती
7.	अक्क महादेवी- I. हे भूख! मत मचल, II. हे मेरे जूही के फूल जैसे ईश्वर
8.	अवतार सिंह पाश- सबसे खतरनाक

कक्षा 12वीं हिंदी 'आधार' परीक्षा हेतु पाठ्यक्रम विनिर्देशन 2020-2021 (कोड सं. 302)

- प्रश्न-पत्र दो खण्डों - खंड 'अ' और 'ब' का होगा।
- खंड 'अ' में वस्तुपरक प्रश्न पूछे जाएँगे।
- खंड 'अ' में कुल 58 प्रश्न होंगे जिनमें से केवल 40 प्रश्नों के ही उत्तर देने होंगे।
- खंड 'ब' में वर्णनात्मक प्रश्न पूछे जाएँगे। प्रश्नों में उचित आंतरिक विकल्प दिए जाएँगे।

परीक्षा भार विभाजन				
खंड अ (वस्तुपरक प्रश्न)				
विषयवस्तु			उप भार	कुल भार
1	अपठित गद्यांश (चिंतन क्षमता एवं अभिव्यक्ति कौशल पर बहुविकल्पात्मक प्रश्न पूछे जाएँगे)			15
	अ	दो अपठित गद्यांशों में से कोई एक गद्यांश करना होगा। (450-500 शब्दों के) (1अंक x 10 प्रश्न)	10	10
	ब	दो अपठित पद्यांशों में से कोई एक पद्यांश करना होगा। (250-250 शब्दों के) (1अंक x 5 प्रश्न)	05	05
2	कार्यालयी हिंदी और रचनात्मक लेखन (‘अभिव्यक्ति और माध्यम’ पुस्तक के आधार पर)			05
	अ	अभिव्यक्ति और माध्यम पुस्तक से बहुविकल्पात्मक प्रश्न (1अंक x5 प्रश्न)	05	05
3	पाठ्यपुस्तक आरोह भाग – 2 से बहुविकल्पात्मक प्रश्न			10

	<b>अ</b>	पठित काव्यांश पर पाँच बहुविकल्पी प्रश्न (1अंक x 05 प्रश्न)	05	
	<b>ब</b>	पठित गद्यांश पर पाँच बहुविकल्पी प्रश्न। (1अंक x 05 प्रश्न)	05	
<b>4</b>	<b>अनुपूरक पाठ्यपुस्तक वितान भाग-2 से बहुविकल्पात्मक प्रश्न</b>		<b>10</b>	
	<b>अ</b>	पठित पाठों पर सात बहुविकल्पी प्रश्न। (1अंक x 10 प्रश्न)	10	
<b>परीक्षा भार विभाजन</b>				
<b>खंड ब (वर्णनात्मक प्रश्न)</b>				
<b>विषयवस्तु</b>			<b>उप भार</b>	<b>कुल भार</b>
<b>5</b>	<b>कार्यालयी हिंदी और रचनात्मक लेखन</b>			<b>20</b>
	<b>1</b>	दिए गए तीन नए और अप्रत्याशित विषयों में से किसी एक विषय पर लगभग 150 शब्दों में रचनात्मक लेखन (5 अंक x1 प्रश्न)	05	
	<b>2</b>	औपचारिक विषय से संबंधित पत्र लेखन। (5 अंक x1 प्रश्न) (विकल्प सहित)	05	
	<b>3</b>	कविता/कहानी/नाटक की रचना प्रक्रिया पर आधारित दो लघुउत्तरीय प्रश्न (3 अंक x 1 प्रश्न) + (2 अंक x 1 प्रश्न) (विकल्प सहित)	05	
	<b>4</b>	समाचार लेखन (उल्टा पिरामिड शैली)/फीचर लेखन/आलेख लेखन पर आधारित दो लघुउत्तरीय प्रश्न (3 अंक x 1 प्रश्न) + (2 अंक x 1 प्रश्न) (विकल्प सहित)	05	

6	<b>पाठ्यपुस्तक आरोह भाग – 2</b>		<b>20</b>	
	1	काव्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 50-60 शब्दों में) (3 अंक x 2 प्रश्न)		6
	2	काव्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 30-40 शब्दों में) (2 अंक x 2 प्रश्न)		4
	3	गद्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 50-60 शब्दों में) (3 अंक x 2 प्रश्न)		6
	4	गद्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 30-40 शब्दों में) (2 अंक x 2 प्रश्न)		4
<b>कुल अंक</b>			<b>80</b>	
7	(अ) श्रवण तथा वाचन		10	<b>20</b>
	(ब) परियोजना कार्य		10	
<b>कुल अंक</b>			<b>100</b>	

**निर्धारित पुस्तकें:**

1. **आरोह, भाग-2**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित नवीनतम संस्करण
2. **वितान, भाग-2**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित नवीनतम संस्करण
3. **अभिव्यक्ति और माध्यम**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित नवीनतम संस्करण

❖ नोट: निम्नलिखित पाठ हटा दिये गये हैं ।

काव्य खंड	
1.	सूर्यकांत त्रिपाठी निराला-बादल राग
2.	हरिवंश राय बच्चन-(i)आत्मपरिचय
3.	आलोक धन्वा-पतंग
4.	कुँवर नारायण-(ii) बात सीधी थी पर
5.	उमाशंकर जोशी-(i) छोटा मेरा खेत, (ii) बगुलों के पंख
गद्य खंड	
6.	विष्णु खरे-चार्ली चैप्लिन यानी हम सब
7.	हजारी प्रसाद द्विवेदी-शिरीष के फूल



**Biology**  
**(Code No. 044)**

**DELETED PORTIONS CLASS XI**

• **Under Unit 1: Diversity of Living Organisms**

○ **Chapter-1: The Living World**

- taxonomy and systematics;
- tools for study of taxonomy- museums, zoological parks, herbaria, botanical gardens, keys for identification.

○ **Chapter-3: Plant Kingdom**

- Angiospermae; Angiosperms - classification up to class, characteristic features and examples.

• **Under Unit-II Structural Organization in Animals and Plants**

○ **Chapter-5: Morphology of Flowering Plants**

- Morphology and modifications: Morphology of different parts of flowering plants: root, stem, leaf, fruit and seed.
- Description of families: - Fabaceae

○ **Chapter-6: Anatomy of Flowering Plants**

- Anatomy and functions of different tissues and tissue systems in dicots and monocots. Secondary growth.

○ **Chapter-7: Structural Organisation in Animals**

- Morphology, Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an insect (cockroach), (a brief account only).

• **Under Unit-IV Plant Physiology**

○ **Chapter-11: Transport in Plants**

- Movement of water, gases and nutrients; cell to cell transport, diffusion, facilitated diffusion, active transport; plant-water relations, imbibition, water potential, osmosis, plasmolysis; long distance transport of water - Absorption, apoplast, symplast, transpiration pull, root pressure and guttation; transpiration, opening and closing of stomata; Uptake and translocation of mineral nutrients - Transport of food, phloem transport, mass flow hypothesis.

○ **Chapter-12: Mineral Nutrition**

- Essential minerals, macro- and micronutrients and their role; deficiency symptoms; mineral toxicity; elementary idea of hydroponics as a method to study mineral nutrition; nitrogen metabolism, nitrogen cycle, biological nitrogen

fixation.

○ **Chapter-15: Plant - Growth and Development**

- Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell;
- Seed dormancy; vernalisation; photoperiodism

• **Under Unit-V Human Physiology**

○ **Chapter-16: Digestion and Absorption**

- Alimentary canal and digestive glands, role of digestive enzymes and gastrointestinal hormones; Peristalsis, digestion, absorption and assimilation of proteins, carbohydrates and fats; calorific values of proteins, carbohydrates and fats; egestion; nutritional and digestive disorders - PEM, indigestion, constipation, vomiting, jaundice, diarrhoea.

○ **Chapter-20: Locomotion and Movement**

- Types of movement - ciliary, flagellar, muscular;
- Skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

○ **Chapter-21: Neural Control and Coordination**

- reflex action; sensory perception; sense organs; elementary structure and functions of eye and ear

**DELETED PORTIONS CLASS XI: PRACTICAL**

**A: List of Experiments**

1. Description of Family Fabaceae; Types of root (Tap and adventitious); types of stem (herbaceous and woody); leaf(arrangement, shape, venation, simple and compound).
2. Preparation and study of T.S. of dicot and monocot roots and stems (primary)
3. Study of osmosis by potato osmometer.
4. Study of plasmolysis in epidermal peels (e.g. Rhoeo/lily leaves or flashy scale leaves of onion bulb).
5. Comparative study of the rates of transpiration in the upper and lower surface of leaves.
6. Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.
7. Test for presence of urea in urine.

8. Test for presence of bile salts in urine.

**B. Study/Observation of the following (spotting)**

1. Tissues and diversity in shape and size of plant cells (palisade cells, guard cells, parenchyma, collenchyma, sclerenchyma, xylem and phloem) through temporary and permanent slides.
2. Different modifications in roots, stems and leaves.
3. Different types of inflorescence (cymose and racemose).
4. Human skeleton and different types of joints with the help of virtual images/models only.

## DELETED PORTION CLASS XII

- **Under Unit-VI Reproduction**

- **Chapter-1: Reproduction in Organism**

- Reproduction, a characteristic feature of all organisms for continuation of species; modes of reproduction - asexual and sexual reproduction; asexual reproduction - binary fission, sporulation, budding, gemmule formation, fragmentation; vegetative propagation in plants.

- **Under Unit-VII Genetics and Evolution**

- **Chapter-7: Evolution**

- Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution - variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy – Weinberg's principle; adaptive radiation; human evolution.

- **Under Unit-VIII Biology and Human Welfare**

- **Chapter 9: Strategies for Enhancement in Food Production**

- Animal husbandry, Plant breeding, tissue culture, single cell protein.

- **Under Unit-X Ecology and Environment**

- **Chapter-14: Ecosystem**

- Ecosystems: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy; nutrient cycles (carbon and phosphorous); ecological succession; ecological services - carbon fixation, pollination, seed dispersal, oxygen release (in brief).

- **Chapter 16: Environmental Issues**

- Air pollution and its control; water pollution and its control; agrochemicals and their effects; solid waste management; radioactive waste management; greenhouse effect and climate change impact and mitigation; ozone layer depletion; deforestation; exemplifying case study as success story addressing environmental issue(s).

## **DELETED PORTIONS CLASS XII: PRACTICAL**

### **A: List of Experiments**

1. Study the presence of suspended particulate matter in air at two widely different sites.
2. Study the plant population density by quadrat method.
3. Study the plant population frequency by quadrat method.

### **B. Study/Observer of the following (spotting)**

1. Pollen germination on stigma through a permanent slide or scanning electron micrograph.
2. Mendelian inheritance using seeds of different colour/sizes of any plant.
3. Controlled pollination - emasculation, tagging and bagging.

**CHEMISTRY (043)****Class XI**

<b>S No</b>	<b>Unit</b>	<b>Portion to be Reduced</b>
1	Some Basic Concepts of Chemistry	Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules.
2	Structure of Atom	Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations
3	Classification of Elements and Periodicity in Properties	Significance of classification, brief history of the development of periodic table,
4	Chemical Bonding and Molecular Structure	--
5	States of Matter: Gases and Liquids	liquefaction of gases, critical temperature, kinetic energy and molecular speeds (elementary idea), Liquid State- vapour pressure, viscosity and surface tension (qualitative idea only, no mathematical derivations)
6	Chemical Thermodynamics	Heat capacity and specific heat capacity, Criteria for equilibrium
7	Equilibrium	hydrolysis of salts (elementary idea), Henderson Equation
8	Redox Reactions	applications of redox reactions
9	Hydrogen	Preparation, properties and uses of hydrogen, hydrogen peroxide - preparation, reactions and structure and use;
10	s -Block Elements	Preparation and Properties of Some Important Compounds: Sodium Carbonate, Sodium Chloride, Sodium Hydroxide and Sodium Hydrogen carbonate, Biological importance of Sodium and Potassium. Calcium Oxide and Calcium Carbonate and their industrial uses, biological importance of Magnesium and Calcium.
11	Some p -Block Elements	Some important compounds: Borax, Boric acid, Boron Hydrides, Aluminium: Reactions with acids and alkalies, uses. Carbon: uses of some important compounds: oxides. Important compounds of Silicon and a few uses: Silicon Tetrachloride, Silicones, Silicates and Zeolites, their uses.
12	Organic Chemistry: Some basic Principles and Techniques	methods of purification, qualitative and quantitative analysis
13	Hydrocarbons	free radical mechanism of halogenation, combustion and pyrolysis.
14	Environmental Chemistry	Entire chapter

## Practical

The following portion to be deleted

### c. Experiments based on pH

a) Any one of the following experiments:

- Determination of pH of some solutions obtained from fruit juices, solution of known and varied concentrations of acids, bases and salts using pH paper or universal indicator.
- Comparing the pH of solutions of strong and weak acids of same concentration.
- Study the pH change in the titration of a strong base using universal indicator.

b) Study the pH change by common-ion in case of weak acids and weak bases.

### d. Chemical Equilibrium

One of the following experiments:

a) Study the shift in equilibrium between ferric ions and thiocyanate ions by increasing/decreasing the concentration of either of the ions.

b) Study the shift in equilibrium between  $[\text{Co}(\text{H}_2\text{O})_6]^{2+}$  and chloride ions by changing the concentration of either of the ions.

## CLASS -XII

S No	Unit	Portion to be Reduced
1	Solid State	Electrical and magnetic properties. Band theory of metals, conductors, semiconductors and insulators and n and p type semi conductors.
2	Solutions	Abnormal molecular mass, Van't Hoff factor
3	Electrochemistry	Lead accumulator, fuel cells, corrosion, law of electrolysis (elementary idea), dry cell- electrolytic cells and Galvanic cells,
4	Chemical Kinetics	Concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation.
5	Surface Chemistry	emulsion - types of emulsions, catalysis: homogenous and heterogeneous, activity and selectivity of solid catalysts; enzyme catalysis,
6	General Principles and Processes of Isolation of Elements	Entire unit
7	p-Block Elements	Preparation and properties of Phosphine, Sulphuric Acid: industrial process of manufacture, Oxides of Nitrogen (Structure only); Phosphorus - allotropic forms, compounds of Phosphorus: Preparation and properties of Halides and Oxo acids (elementary idea only).
8	d and f Block Elements	Chemical reactivity of lanthanoids, Actinoids -Electronic configuration, oxidation states and comparison with lanthanoids. Preparation and properties of $\text{KMnO}_4$ and $\text{K}_2\text{Cr}_2\text{O}_7$
9	Coordination Compounds	Structure and stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).
10	Haloalkanes and Haloarenes	Uses and environmental effects of -dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.
11	Alcohols, Phenols and Ethers	uses with special reference to methanol and ethanol.
12	Aldehydes, Ketones and Carboxylic Acid	---
13	Amines	Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.



14	Biomolecules	Oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen), importance of carbohydrates. Vitamins– classification and functions. Enzymes. Hormones - Elementary idea excluding structure.
15	Polymers	entire chapter
16	Chemistry in Everyday life	entire chapter

### Practical

Following portions should be considered deleted.

#### A. Surface Chemistry

- a. Preparation of one lyophilic and one lyophobic sol  
Lyophilic sol - starch, egg albumin and gum  
Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide.
- b. Dialysis of sol-prepared in (a) above.
- c. Study of the role of emulsifying agents in stabilizing the emulsion of different oils.

#### B. Chemical Kinetics

- a. Effect of concentration and temperature on the rate of reaction between Sodium Thiosulphate and Hydrochloric acid.
- b. Study of reaction rates of any one of the following:
  - i) Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentration of Iodide ions.
  - ii) Reaction between Potassium Iodate, (KIO<sub>3</sub>) and Sodium Sulphite: (Na<sub>2</sub>SO<sub>3</sub>) using starch solution as indicator (clock reaction).

#### C. Thermo chemistry Any one of the following experiments

- i) Enthalpy of dissolution of Copper Sulphate or Potassium Nitrate.
- ii) Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH).
- iii) Determination of enthalpy change during interaction (Hydrogen bond formation) between Acetone and Chloroform.

#### D. Electrochemistry Variation of cell potential in Zn/Zn<sup>2+</sup> || Cu<sup>2+</sup>/Cu with change in concentration of electrolytes (CuSO<sub>4</sub> or ZnSO<sub>4</sub>) at room temperature.

#### G. Preparation of Organic Compounds Preparation of any one of the following compounds

- i) Acetanilide
- ii) Di-benzal Acetone
- iii) p-Nitroacetanilide

Aniline yellow or 2 - Naphthol Anilinedye

**DEDUCTED**  
**COMPUTER SCIENCE - 083**  
**CLASS XI**

<b>Topic reduced</b>
Unit I: Computer Systems and Organisation <ul style="list-style-type: none"><li>● Encoding Schemes : UTF8, UTF32</li><li>● Concept of cloud computing and cloud services (SaaS,IaaS,PaaS), cloud (public/private), Blockchain technology</li></ul>
Unit II: Computational Thinking and Programming - 1  Decomposition – concept, need for decomposing a problem, examples of problem solving using decomposition. <ul style="list-style-type: none"><li>● Sorting algorithm: bubble and insertion sort; count the number of operations while sorting.</li></ul>
Suggested Practical List Input a list of elements, sort in ascending/ descending order using Bubble/ Insertion sort.

**CLASS XII**

Unit I: Computational Thinking and Programming - 2 <ul style="list-style-type: none"><li>● Recursion – simple algorithms with recursion : print a message forever, sum of first n natural numbers, factorial, Fibonacci numbers, recursion on arrays : binary search</li><li>● Idea of efficiency : performance measurement in terms of the number of operations.</li><li>● Data-structures: Lists as covered in Class XI, Stacks – Push, Pop using a list, Queues – Insert, Delete using a list. (One of the data structure Stack or Queue. Note : While setting the question paper a students will have an option between Stack and Queue.)</li></ul>
Unit II: Computer Networks <ul style="list-style-type: none"><li>● Web Scripting Client side (VB Script, Java Script, PHP) and Server side (ASP, JSP, PHP), Web 2.0 (for social networking)</li><li>● E-commerce payment transactions using online banking, mobile banking, payment apps and services.</li></ul>
Unit III: Database Management CREATE TABLE, DROP TABLE, ALTER TABLE, UPDATE ....SET, INSERT, DELETE
1. Suggested Practical List: Python Programming <ul style="list-style-type: none"><li>● Recursively find the factorial of a natural number</li><li>● Write a recursive code to find the sum of all elements of a list.</li><li>● Write a recursive code to compute the nth Fibonacci number</li></ul>

## GEOGRAPHY - 029

### Class XI

<b>Book I – Fundamentals of Physical Geography</b>
Unit II - Chapter 2 – The Origin and Evolution of the Earth
Unit III - Chapter 7 – Landforms and their Evolution
Unit IV -Chapter 10 – Atmospheric Circulation and Weather Systems
Unit V -Chapter 12 – World Climate and Climate Change
Chapter 13 – Water (Oceans)
<b>Book II – India Physical Environment</b>
Unit II - Chapter 2 – Structure and Physiography
Unit III - Chapter 4 – Climate
Unit IV - Chapter 7 – Natural Hazards and Disasters
<b>Practical Geography Part I</b>
Chapter 4 – Map Projections
Chapter 5 – Topographical Maps

All other chapters barring above mentioned would be included in the Syllabus for the year 2020-21.

### Class XII

<b><u>Book I – Fundamentals of Human Geography</u></b>
Unit III - Chapter 6 – Secondary activities
Chapter 8 – Transport and Communication
Chapter 9 – International Trade
<b><u>Book II – India People and Economy</u></b>
Unit III - Chapter 5 – Land Resources and Agriculture
Chapter 8 – Manufacturing Industries
Unit IV - Chapter 10 – Transport and Communication
Chapter 11 – International Trade
<b><u>Practical Geography Part II</u></b>
Unit II - Field Study or Spatial Information Technology

All other chapters barring above mentioned would be included in the Syllabus for the year 2020-21.

**History (027)**  
2020-2021

**Class XI**  
**THEMES IN WORLD HISTORY**

<b>S N</b>	<b>Topics</b>	<b>Theme</b>	<b>Deleted Portion</b>
1	Early Societies	Theme-1	Complete Chapter
2	Nomadic Empires	Theme-5	Complete Chapter
3	Confrontation of Cultures	Theme-8	Complete Chapter
<b>No Change in Map Work</b>			

**Class XII-**  
**THEMES IN INDIAN HISTORY**

<b>S. N</b>	<b>Topics</b>	<b>Theme</b>	<b>Deleted Portion</b>
1	Through the Eyes of Travellers	Theme-5 Part-II	Complete Chapter
2	Peasants, Zamindars And the State	Theme-8 Part-II	Complete Chapter
3	Colonialism and The Countryside	Theme 10 Part-III	A Revolt in The Countryside -The Bombay Deccan (Unit-3), The Deccan Riots Commission (Unit-4)  <b>From Page No-275-285 - Deleted</b>
4	Colonial Cities	Theme-12 Part-III	Complete Chapter
5	Understanding Partition	Theme-14 Part-III	Complete Chapter
<b>No Change in Map Work</b>			

## ECONOMICS (Code No. 030)

### CLASS – XI

#### Part A: Statistics for Economics

Unit	Topics Deleted
<b>Unit 3: Statistical Tools and Interpretation</b>	<b>Measures of Dispersion</b> - (range, quartile deviation, mean deviation and); (co-efficient of range, co-efficient of quartile-deviation, co-efficient of mean deviation,  <b>Correlation</b> –Spearman's rank correlation.  <b>Index Numbers</b> - index of industrial production

#### Part B: Introductory Microeconomics

Unit	Topics Deleted
<b>Unit 4: Introduction</b>	concepts of production possibility frontier and
<b>Unit 6: Producer Behaviour and Supply</b>	Producer's equilibrium-meaning and its conditions in terms of marginal revenue-marginal cost.
<b>Unit 7: Forms of Market and Price Determination under Perfect Competition with simple applications</b>	Other Market Forms - monopoly, monopolistic competition - their meaning and features

### CLASS - XII

#### Part A: Introductory Macroeconomics

Unit	Topics Deleted
<b>Unit 2: Money and Banking</b>	Control of Credit through Bank Rate, CRR, SLR, Repo Rate and Reverse Repo Rate, Open Market Operations, Margin requirement.
<b>Unit 5: Balance of Payments</b>	Balance of payments deficit-meaning. Determination of exchange rate in a free market.

#### Part B: Indian Economic Development

Unit	Topics Deleted
<b>Unit 7: Current challenges facing Indian Economy</b>	Growth of Education Sector in India alternative farming - organic farming  <b>Infrastructure:</b> Energy

**DELETED PORTION  
MATHEMATICS - 041  
CLASS XI**

UNIT/ CHAPTER	SYLLABUS REDUCED
<b>Unit- I: Sets and Functions</b>	
1.Sets	<input type="checkbox"/> Difference of sets. <input type="checkbox"/> Complement of a set. Properties of Complement
2.Relations & Functions	<input type="checkbox"/> (up to $R \times R \times R$ ). <input type="checkbox"/> Sum, Difference, product and quotients of functions
3. Trigonometric Functions	<input type="checkbox"/> General Solutions of trigonometric equations of the type $\sin y = \sin a$ , $\cos y = \cos a$ and $\tan y = \tan a$ .
<b>Unit II: Algebra</b>	
1.Principle of Mathematical Induction	<input type="checkbox"/> Delete full chapter
2.Complex Numbers and Quadratic Equations	<input type="checkbox"/> Polar representation of complex numbers. <input type="checkbox"/> Square root of a complex number.
3.Linear Inequalities	Nil
4. Permutations and Combinations	<input type="checkbox"/> Derivation of formulae for ${}^n P_r$ and ${}^n C_r$
5.Binomial theorem	<input type="checkbox"/> Delete full Chapter
6. Sequence and Series	<input type="checkbox"/> Formulae for the following special sums $\sum k, \sum k^2, \sum k^3$ .
<b>Unit III: Coordinate geometry</b>	
1.Straight Lines	<input type="checkbox"/> Shifting of origin. <input type="checkbox"/> Equation of family of lines passing through the point of intersection of two lines.
2 Conic sections	<input type="checkbox"/> a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section.
3.Introduction to Three-dimensional Geometry	Nil
<b>Unit-IV : Calculus</b>	
1.Limits and Derivatives	Nil
<b>Unit-V : Mathematical Reasoning</b>	
1.Mathematical Reasoning	<input type="checkbox"/> Delete full chapter
<b>Unit-VI: Statistics and Probability</b>	

1. Statistics	<input type="checkbox"/> Analysis of frequency distributions with equal means but different variances.
2. Probability	<input type="checkbox"/> Axiomatic (set theoretic) probability, connections with other theories of earlier classes

## CLASS XII

UNIT/CHAPTER	SYLLABUS REDUCED
<b>Unit1: Relations and Functions</b>	
1. Relations and Functions	<input type="checkbox"/> composite functions, inverse of a function.
2. Inverse Trigonometric Functions	<input type="checkbox"/> Graphs of inverse trigonometric functions <input type="checkbox"/> Elementary properties of inverse trigonometric functions
<b>Unit2: Algebra</b>	
1. Matrices	<input type="checkbox"/> existence of non-zero matrices whose product is the zero matrix. <input type="checkbox"/> Concept of elementary row and column operations. <input type="checkbox"/> proof of the uniqueness of inverse, if it exists.
2. Determinants	<input type="checkbox"/> properties of determinants <input type="checkbox"/> Consistency, inconsistency and number of solutions of system of linear equations by examples,
<b>Unit-III: Calculus</b>	
1. Continuity and Differentiability	<input type="checkbox"/> Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretation.
2. Applications of Derivatives	<input type="checkbox"/> rate of change of bodies, use of derivatives in approximation <input type="checkbox"/>
3. Integrals	$\int \sqrt{ax^2 + bx + c} dx,$ $\int (ax + b)\sqrt{ax^2 + bx + c} dx$ <input type="checkbox"/> Definite integrals as a limit of a sum
4. Applications of the Integrals	<input type="checkbox"/> Area between any of the two above said curves
5. Differential Equations	<input type="checkbox"/> formation of differential equation whose general solution is given. <input type="checkbox"/> Solutions of linear differential equation of the type: $\frac{dx}{dy} + px = q,$ where p and q are functions of y or constants.
<b>Unit-IV: Vectors and Three-Dimensional Geometry</b>	
1. Vectors	scalar triple product of vectors.
2. Three - dimensional Geometry	<input type="checkbox"/> Angle between (i) two lines, (ii) two planes, (iii) a line and a plane



<b>Unit-V: Linear Programming</b>	
1. Linear Programming	<input type="checkbox"/> mathematical formulation of L.P. problems <input type="checkbox"/> (unbounded)
<b>Unit-VI: Probability</b>	
1. Probability	<input type="checkbox"/> mean and variance of random variable. Binomial probability distribution.

**ENGLISH (CORE)- 301**  
**RATIONALISED CURRICULUM (2020-21)**

**Background**

Students are expected to have acquired a reasonable degree of language proficiency in English Language by the time they come to class XI, and the course aims, essentially, at promoting the higher-order language skills.

For a large number of students, the higher secondary stage will be a preparation for the university, where a fairly high degree of proficiency in English may be required. But for another large group, the higher secondary stage may be a preparation for entry into the professional domain. The Core Course should cater to both groups by promoting the language skills required for academic study as well as the language skills required for the workplace.

**Competencies to be focused on:**

The general objectives at this stage are to:

- listen and comprehend live as well as record in writing oral presentations on a variety of topics
- develop greater confidence and proficiency in the use of language skills necessary for social and academic purpose to participate in group discussions, interviews by making short oral presentation on given topics
- perceive the overall meaning and organisation of the text (i.e., correlation of the vital portions of the text)
- identify the central/main point and supporting details, etc., to build communicative competence in various lexicons of English
- promote advanced language skills with an aim to develop the skills of reasoning, drawing inferences, etc. through meaningful activities
- translate texts from mother tongue(s) into English and vice versa
- develop ability and acquire knowledge required in order to engage in independent reflection and enquiry
- read and comprehend extended texts (prescribed and non-prescribed) in the following genres: science fiction, drama, poetry, biography, autobiography, travel and sports literature, etc.
- text-based writing (i.e., writing in response to questions or tasks based on prescribed or unseen texts) understand and respond to lectures, speeches, etc.

- write expository / argumentative essays, explaining or developing a topic, arguing a case, etc. write formal/informal letters and applications for different purposes
- make use of contextual clues to infer meanings of unfamiliar vocabulary
- select, compile and collate information for an oral presentation
- produce unified paragraphs with adequate details and support
- use grammatical structures accurately and appropriately
- write items related to the workplace (minutes, memoranda, notices, summaries, reports etc.
- filling up of forms, preparing CV, e-mail messages., making notes from reference materials, recorded talks etc.

The core course should draw upon the language items suggested for class IX-X and delve deeper into their usage and functions. Particular attention may, however, be given to the following areas of grammar:

- The use of passive forms in scientific and innovative writings.
- Convert one kind of sentence/clause into a different kind of structure as well as other items to exemplify stylistic variations in different discourses modal auxiliaries-uses based on semantic considerations.

### **A. Specific Objectives of Reading**

Students are expected to develop the following study skills:

- skim for main ideas and scan for details
- refer to dictionaries, encyclopedia, thesaurus and academic reference material in any format
- select and extract relevant information, using reading skills of skimming and scanning
- understand the writer's purpose and tone
  - comprehend the difference between the literal and the figurative
- differentiate between claims and realities, facts and opinions, form business opinions on the basis of latest trends available
- comprehend technical language as required in computer related fields, arrive at personal conclusion and logically comment on a given text.

- Specifically develop the ability to be original and creative in interpreting opinion, develop the ability to be logically persuasive in defending one's opinion and making notes based on a text.

### **Develop literary skills as enumerated below:**

- respond to literary texts
- appreciate and analyse special features of languages that differentiate literary texts from non-literary ones, explore and evaluate features of character, plot, setting, etc.
- understand and appreciate the oral, mobile and visual elements of drama .Identify the elements of style such as humour, pathos, satire and irony, etc.
- make notes from various resources for the purpose of developing the extracted ideas into sustained pieces of writing

## **B. Listening and Speaking**

Speaking needs a very strong emphasis and is an important objective leading to professional competence. Hence, testing of oral skills must be made an important component of the overall testing pattern. To this end, speaking and listening skills are overtly built into the material to guide the teachers in actualization of the skills.

### **I. Specific Objectives of Listening & Speaking**

Students are expected to develop the ability to:

- take organized notes on lectures, talks and listening passages
- listen to news bulletins and to develop the ability to discuss informally a wide ranging issues like current national and international affairs, sports, business, etc.
- respond in interviews and to participate in formal group discussions.
- make enquiries meaningfully and adequately and to respond to enquiries for the purpose of travelling within the country and abroad.
- listen to business news and to be able to extract relevant important information.
- to develop public speaking skills.

## **II. Guidelines for Assessment in Listening and Speaking Skills**

### **i. Activities:**

- Activities for listening and speaking available at [www.cbseacademic.in](http://www.cbseacademic.in) can be used for developing listening and speaking skills of students.

- Subject teachers should also refer to books prescribed in the syllabus.
- In addition to the above, teachers may plan their own activities and create their own material for assessing the listening and speaking skills.

**ii. Parameters for Assessment:**

The listening and speaking skills are to be assessed on the following parameters:

- i. Interactive competence (Initiation & turn taking, relevance to the topic).
- ii. Fluency (cohesion, coherence and speed of delivery).
- iii. Pronunciation
- iv. Language (accuracy and vocabulary).

**iii. Schedule:**

- The practice of listening and speaking skills should be done throughout the academic year.
- The final assessment of the skills is to be done as per the convenience and schedule of the school.

**III. Record keeping:**

The record of the activities done and the marks given must be kept for three months after the declaration of result, for any random checking by the Board.

**No recording of speaking skills is to be sent to the Board.**

**C. Specific Objectives of Writing**

**The students will be able to:**

- write letters to friends, relatives, etc. to write business and official letters.
- open accounts in post offices and banks. To fill in railway/airline reservation forms.
- draft notices, advertisements and design posters effectively and appropriately
- write on various issues to institutions seeking relevant information, lodge complaints, express gratitude or render apology.
- write applications, fill in application forms, prepare a personal bio-data for admission into colleges, universities, entrance tests and jobs.
- write informal reports as part of personal letters on functions, programmes and activities held in school (morning assembly, annual day, sports day, etc.)
- write formal reports for school magazines/events/processes/ or in local newspapers about events or occasions.
- express opinions, facts, arguments in the form of speech or debates, using a variety of accurate sentence structures
- draft papers to be presented in symposia.

- take down notes from talks and lectures.
- write examination answers according to the requirement of various subjects.
- summarise a text.

#### **D. More About Reading**

Inculcating good reading habits in children has always been a concern for all stakeholders in education. The purpose is to create independent thinking individuals with the ability to not only create their own knowledge but also critically interpret, analyse and evaluate it with objectivity and fairness. This will also help students in learning and acquiring better language skills.

Creating learners for the 21st century involves making them independent learners who can learn, unlearn and relearn. If our children are in the habit of reading, they will learn to reinvent themselves and deal with the many challenges that lie ahead of them.

Reading is not merely decoding information or pronouncing words correctly. It is an interactive dialogue between the author and the reader in which the reader and the author share their experiences and knowledge with each other. Good readers are critical readers with an ability to arrive at a deeper understanding of not only the world presented in the book but also of the real world around them.

Consequently, they become independent thinkers capable of taking their own decisions in life rationally. Hence, a few activities are suggested below which teachers may use as a part of the reading project.

- Short review / dramatization of the story
- Commentary on the characters
- Critical evaluation of the plot, storyline and characters
- Comparing and contrasting the characters within the story, with other characters in stories by the same author or by different authors
- Extrapolating about the story read or life of characters after the story ends
- defending characters actions in the story
- Making an audio story out of the novel/text to be read aloud.
- Interacting with the author
- Holding a literature fest where students role-play as various characters to interact with each other
- Role playing as authors/poets/dramatists, to defend their works and characters
  - Symposiums and seminars for introducing a book, an author, or a theme
- Creating graphic novels out of novel or short stories they read
- Dramatizing incidents from a novel or a story

- Creating their own stories
- Books of one genre to be read by the whole class.

Teachers may select books and e-books suitable to the age and level of the learners. Care ought to be taken to choose books that are appropriate in terms of language, theme and content and which do not hurt the sensibilities of a child.

Teachers may later suggest books from other languages by dealing with the same themes as an extended activity. The Project should lead to independent learning/reading skills and hence the chosen book should not be taught in class, but may be introduced through activities and be left for the students to read at their own pace. Teachers may, however, choose to assess a student's progress or success in reading the book by asking for verbal or written progress reports, looking at their diary entries, engaging in a discussion about the book, giving a short quiz or a work sheet about the book/short story. A befitting mode of assessment may be chosen by the teacher.

## **Methods and Techniques**

The techniques used for teaching should promote habits of self-learning and reduce dependence on the teacher. In general, we recommend a multi-skill, learner-centred, activity based approach, of which there can be many variations. The core classroom activity is likely to be that of silent reading of prescribed/selected texts for comprehension, which can lead to other forms of language learning activities such as role-play, dramatization, group discussion, writing, etc., although many such activities could be carried out without the preliminary use of textual material. It is important that students be trained to read independently and intelligently, interacting actively with texts, with the use of reference materials (dictionary, thesaurus, etc.) where necessary. Some pre-reading activity will generally be required, and the course books should suggest suitable activities, leaving teachers free to devise other activities when desired. So also, the reading of texts should be followed by post reading activities. It is important to remember that students should be encouraged to interpret texts in different ways.

Group and pair activities can be resorted to when desired, although many useful language activities can be carried out individually. In general, teachers should encourage students to interact actively with texts and with each other. Oral activity (group discussion, etc.) should be encouraged.

**ENGLISH CORE (CODE NO. 301)**

**CLASS – XI (2020-21)**

**PART A - 40 MARKS**

**Reading**

**18 Marks**

I. Multiple Choice questions based on one unseen passage to assess comprehension, interpretation and inference. Vocabulary and inference of meaning will also be assessed. The passage may be factual, descriptive or literary. Ten out of eleven questions to be done. **(10x1=10 Marks)**

II. Multiple Choice questions based on one unseen **case-based** factual passage with verbal/visual inputs like statistical data, charts etc. Eight out of Nine questions to be done. **(8x1=8 Marks)**

*Note: The combined word limit for both the passages will be 600-750.*

**Grammar**

**8 Marks**

III. Multiple choice questions on Gap filling (Determiners, Tenses)

IV. Multiple choice questions on re-ordering/transformation of sentences

**(Total eight questions to be done out of the ten given).**

**Literature Section**

**14 Marks**

V. Multiple Choice questions from an extract from Poetry from **Hornbill** to assess comprehension and appreciation. Any 1 out of 2 extracts to be done. **(3x1=3)**

VI. Multiple Choice questions based on two Prose extracts, out of the three given, from Prose (**Hornbill as well as Snapshots** to assess comprehension and appreciation. **(6x1=6)**

VII. Text based Multiple Choice Questions to assess comprehension, analysis and interpretation, from Prose and Poetry. Five questions out of six to be done. **(5x1=5)**



## PART B - 40 MARKS

### Reading Section:

8 Marks

Q1. Note Making and Summarization based on a passage of approximately 200-250 words.

- I. Note Making: **5 Marks**
- Title: 1
  - Numbering and indenting: 1
  - Key/glossary: 1
  - Notes: 2
- II. Summary (up to 50 words): **3 Marks**
- Content: 1
  - Expression: 1

### Writing Section:

16 Marks

Q2. Short writing task **-Notice** writing up to 50 words. One out of the two given questions to be answered (**3 Marks**: Format : 1 / Content : 1 / Expression : 1)

Q3. Short writing task **-Poster** up to 50 words. One out of the two given questions to be answered. (**3marks**:Format : 1 / Content : 1 / Expression : 1)

Q4. Letters based on verbal/visual input, to be answered in 120-150 words. Business or official letters (for making enquiries, registering complaints, asking for and giving information, placing orders and sending replies), letter to the school or college authorities, regarding admissions, school issues, requirements / suitability of courses, etc. One out of the two given questions to be answered (**5 Marks**: Format: 1 / Content: 2 / Expression: 2)

Q5 .Writing composition based on visual/verbal inputs in 120-150 words. May be descriptive / argumentative in nature such as **speech/debate**. The theme should be contemporary topical issues. One out of the two given questions to be answered. (**5 Marks**: Format: 1 / Content: 2 / Expression: 2)

### Literature Section:

16 Marks

Q6. **Two** Short answer type question(**one from Prose and one from Poetry from the book Hornbill**), **out of four**, to be answered in 30-40 words. Questions should elicit inferential responses through critical thinking. (**2x2=4**)

Q7. One Short answer type question, from **Prose (Snapshots)**, to be answered in 40-50 words. Questions should elicit inferential responses through critical thinking. Any 1 out of 2 questions to be done. **(1x2=2)**

Q 8. One Long answer type question, from **Prose/poetry (Hornbill)**, to be answered in 120-150 words to assess global comprehension and extrapolation beyond the text. Questions to provide evaluative and analytical responses using incidents, events, themes as reference points. Any 1 out of 2 questions to be done.**(1x5=5)**

**Q.9** One Long answer type question, based on the chapters from the book **Snapshots**, to be answered in 120-150 words to assess global comprehension and extrapolation beyond the text. Questions to provide evaluative and analytical responses using incidents, events, themes as reference points. Any 1 out of 2 questions to be done.**(1x5=5)**

### Deleted Topics

#### Writing

- **Classified Advertisements,**
- **Letters to the editor (giving suggestions/opinions on an issue) Provide realistic context in the form of newspaper report/article to which the students may respond.**
- **Application for a job with a bio-data or résumé**
- **Article & Report Writing**
- **Narrative**

#### Grammar

- **Modals**
- **Clauses**
- **Change of Voice**
- **Error Correction, editing task/cloze passages**

#### Literature

##### **Hornbill**

- ***Father To Son***
- ***The Adventure***

##### **Snapshots**

- ***The Ghat of the Only World***
- ***The Tale of Melon City***

#### **Prescribed Books**

1. **Hornbill:** English Reader published by National Council of Education Research and Training, New Delhi

**2. Snapshots:** Supplementary Reader published by National Council of Education Research and Training, New Delhi

**Question Paper Design 2020-21**

**English CORE XI (Code No. 301)**

<b>Section</b>	<b>Competencies</b>	<b>Total marks</b>	<b>%</b>
Reading Comprehension	Conceptual understanding, decoding, Analyzing, inferring, interpreting, appreciating, literary, conventions and vocabulary, summarizing and using appropriate format/s	26	32.5%
Creative Writing Skills and Grammar	Conceptual Understanding, application of rules, Analysis, Reasoning, appropriacy of style and tone, using appropriate format and fluency, inference, analysis, evaluation and creativity	24	30%
Literature Textbooks and Supplementary Reading Text	Recalling, reasoning, appreciating literary convention, inference, analysis, creativity with fluency	30	37.5%
	<b>TOTAL</b>	<b>80</b>	<b>100%</b>
Assessment of Listening and Speaking Skills		<b>20</b>	-
	<b>GRAND TOTAL</b>	<b>100</b>	

**ENGLISH CORE (CODE NO. 301)**

**CLASS – XII 2020-21**

**PART A 40 MARKS**

**Reading Comprehension 20 Marks**

I. Multiple Choice questions based on one unseen passage to assess comprehension, interpretation and inference. Vocabulary and inference of meaning will also be assessed. The passage may be factual, descriptive or literary. Ten out of eleven questions to be done. **(10x1=10 Marks)**

II. Multiple Choice questions based on one unseen **case-based** factual passage with verbal/visual inputs like statistical data, charts, newspaper report etc. Ten out of eleven questions to be done. **(10x1=10 Marks)**

Note: The combined word limit for both the passages will be 700-750 words.

**Literature 20 Marks**

III. Multiple Choice Questions based on two prose extracts, one each from the books **Flamingo and Vistas**, to assess comprehension and appreciation. Refer to the lines to answer questions based on the given extract. Any 2 out of 3 extracts to be done. **(8x1=8)**

IV. Multiple Choice Questions based on a poetry extract from the book **Flamingo** to assess comprehension, analysis and inference. Refer to the lines to answer questions based on the given extract. Any 1 out of 2 extracts to be done. **(4x1=4)**

VI. Text based questions to assess comprehension, analysis, inference and interpretation from the books **Flamingo and Vistas**. Eight out of ten questions to be done. **(8x1=8)**

## PART B (SUBJECTIVE QUESTIONS) - 40 MARKS

### Writing Section: 16 Marks

Q1. Short writing task –Notice/Advertisement up to 50 words. One out of the two given questions to be answered.(3 Marks: Format : 1 / Content : 1 / Expression : 1).

Q2. Short writing task –Formal/Informal Invitation and Reply up to 50 words.One out of the two given questions to be answered.(3 Marks: Format : 1 / Content : 1 / Expression : 1)

Q3. Letters based on verbal/visual input, to be answered in approximately 120-150 words. Letter types include application for a job, Letters to the editor (giving suggestions or opinion on issues of public interest) . One out of the two given questions to be answered (5 Marks :Format: 1 / Content: 2 / Expression: 2)

Q4. Article/ Report Writing, descriptive and analytical in nature, based on verbal inputs, to be answered in 120-150 words. One out of the two given questions to be answered (5Marks:Format : 1 / Content : 2 / Expression : 2)

### Literature Section: 24 Marks

Q6. **Five** Short answer type question, **out of six, from Prose and Poetry from the book Flamingo**, to be answered in 30-40 words. Questions should elicit inferential responses through critical thinking.(5x2=10)

Q7. **Two** Short answer type question ,out of three, from **Prose (Vistas)**, to be answered in 30-40 words. Questions should elicit inferential responses through critical thinking. (2x2=4)

Q 8. **One** Long answer type question, from **Prose/poetry (Flamingo)**, to be answered in 120-150 words to assess global comprehension and extrapolation beyond the text. Questions to provide evaluative and analytical responses using incidents, events, themes as reference points. Any 1 out of 2 questions to be done.(1x5=5)

**Q.9 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 evaluative and analytical responses using incidents, events, themes as reference points. Any 1 out of 2 questions to be done.(1x5=5)

## **Prescribed Books**

1. **Flamingo:** English Reader published by National Council of Education Research and Training, New Delhi
2. **Vistas:** Supplementary Reader published by National Council of Education Research and Training, New Delhi

## **Deleted Topics**

### **Reading**

### **Note Making & Summarizing**

### **Literature**

#### **FLAMINGO**

- |                       |                     |
|-----------------------|---------------------|
| 1. Poets and Pancakes | 1. A Roadside Stand |
| 2. The Interview      |                     |
| 3. Going Places       |                     |

#### **VISTAS**

1. The Tiger King
2. Journey to the end of the Earth
3. Memories of Childhood

### **Writing**

- Poster making
- Business or official letters (for making enquiries, registering complaints, asking for and giving information, placing orders and sending replies)
- Speech, Debate

**Question Paper Design 2020-21**

**English CORE XII (Code No. 301)**

<b>Section</b>	<b>Competencies</b>	<b>Total marks</b>	<b>%</b>
Reading Comprehension	Conceptual understanding, decoding, Analyzing, inferring, interpreting, appreciating, literary, conventions and vocabulary, summarizing and using appropriate format/s	20	25%
Creative Writing Skills	Conceptual Understanding, application of rules, Analysis, Reasoning, appropriacy of style and tone, using appropriate format and fluency, inference, analysis, evaluation and creativity	16	20%
Literature Textbooks and Supplementary Reading Text	Recalling, reasoning, appreciating literary convention, inference, analysis, creativity with fluency	44	55%
	<b>TOTAL</b>	<b>80</b>	<b>100%</b>
Assessment of Listening and Speaking Skills		<b>20</b>	-
	<b>GRAND TOTAL</b>	<b>100</b>	

# COMPARISON OF REVISED SYLLABUS WITH ORIGINAL SYLLABUS CLASS: XI SUBJECT: PHYSICS SESSION 2020-21

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<p>uniform motion, average speed and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical treatment). <b>Chapter-4: Motion in a Plane</b> Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, relative velocity, Unit vector; resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors. Motion in a plane, cases of uniform velocity and uniform acceleration projectile motion, uniform circular motion. <b>Unit III: Laws of Motion</b> <b>14 Periods</b> <b>Chapter-5: Laws of Motion</b> Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion. Law of conservation of linear momentum and its applications. Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road). <b>Unit IV: Work, Energy and Power</b> <b>12 Periods</b> <b>Chapter-6: Work, Energy and Power</b> Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces: conservation of mechanical energy (kinetic and potential energies); non-</p>	<p>uniform motion, average speed and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical treatment). <b>Chapter-4: Motion in a Plane</b> Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, relative velocity, Unit vector; resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors. Motion in a plane, cases of uniform velocity and uniform acceleration-projectile motion, uniform circular motion. <b>Unit III: Laws of Motion</b> <b>10 Periods</b> <b>Chapter-5: Laws of Motion</b> Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion.(recapitulation only) Law of conservation of linear momentum and its applications. Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road). <b>Unit IV: Work, Energy and Power</b> <b>12 Periods</b> <b>Chapter-6: Work, Energy and Power</b> Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces: conservation of mechanical energy (kinetic and potential energies); non-</p>	<p><b>Chapter-5 Laws of Motion</b> Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion</p>
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<p>conservative forces: motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.</p> <p><b>Unit V: Motion of System of Particles and Rigid Body</b> <b>18 Periods</b></p> <p><b>Chapter-7: System of Particles and Rotational Motion</b> Centre of mass of a two-particle system, momentum conservation and centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod. Moment of a force, torque, angular momentum, law of conservation of angular momentum and its applications. Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions. Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation). <b>Statement of parallel and perpendicular axes theorems and their applications.</b></p> <p><b>Unit VI: Gravitation 12 Periods</b> <b>Chapter-8: Gravitation</b> <b>Kepler's laws of planetary motion,</b> universal law of gravitation. <b>Acceleration due to gravity</b> and its variation with altitude and depth. Gravitational potential energy and gravitational potential, escape velocity, orbital velocity of a satellite, Geo-stationary satellites.</p> <p><b>Unit VII: Properties of Bulk Matter 24 Periods</b> <b>Chapter-9: Mechanical Properties of Solids</b> <b>Elastic behaviour,</b> Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, <b>shear modulus of rigidity, Poisson's ratio; elastic energy.</b></p> <p><b>Chapter-10: Mechanical Properties of Fluids</b></p>	<p>conservative forces: motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.</p> <p><b>Unit V: Motion of System of Particles and Rigid Body</b> <b>16 Periods</b></p> <p><b>Chapter-7: System of Particles and Rotational Motion</b> Centre of mass of a two-particle system, momentum conservation and centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod. Moment of a force, torque, angular momentum, law of conservation of angular momentum and its applications. Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions. Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation).</p> <p><b>Unit VI: Gravitation 8 Periods</b> <b>Chapter-8: Gravitation</b> Universal law of gravitation. <b>Acceleration due to gravity (recapitulation only)</b> and its variation with altitude and depth. Gravitational potential energy and gravitational potential, escape velocity, orbital velocity of a satellite, Geo-stationary satellites.</p> <p><b>Unit VII: Properties of Bulk Matter 22 Periods</b> <b>Chapter-9: Mechanical Properties of Solids</b> Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus</p> <p><b>Chapter-10: Mechanical Properties of Fluids</b></p>	<p><b>Chapter-7 System of Particles and Rotational Motion</b></p> <p><b>Statement of parallel and perpendicular axes theorems and their applications.</b></p> <p><b>Chapter-8 Gravitation</b> <b>Kepler's laws of planetary motion,</b> <b>Acceleration due to gravity</b></p> <p><b>Chapter-9 Mechanical Properties of Solids</b> <b>Elastic behaviour,</b> <b>shear modulus of rigidity, Poisson's ratio; elastic energy.</b></p>
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<p>Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its applications. Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise.</p> <p><b>Chapter-11: Thermal Properties of Matter</b> Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv calorimetry; change of state - latent heat capacity.</p> <p>Heat transfer-conduction, convection and radiation, thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law, Greenhouse effect.</p> <p><b>Unit VIII: Thermodynamics</b> <b>12 Periods</b> <b>Chapter-12: Thermodynamics</b> Thermal equilibrium and definition of temperature (zeroth law of thermodynamics), heat, work and internal energy. First law of thermodynamics, isothermal and adiabatic processes. Second law of thermodynamics: reversible and irreversible processes, Heat engine and refrigerator.</p> <p><b>Unit IX: Behaviour of Perfect Gases and Kinetic Theory of Gases</b> <b>08 Periods</b> <b>Chapter-13: Kinetic Theory</b> Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases -assumptions, concept of pressure. Kinetic interpretation of temperature;</p>	<p>Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its applications. Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise.</p> <p><b>Chapter-11: Thermal Properties of Matter</b> Heat, temperature,( recapitulation only) thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv calorimetry; change of state - latent heat capacity.</p> <p>Heat transfer-conduction, convection and radiation (recapitulation only), thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law, Greenhouse effect.</p> <p><b>Unit VIII: Thermodynamics</b> <b>10 Periods</b> <b>Chapter-12: Thermodynamics</b> Thermal equilibrium and definition of temperature (zeroth law of thermodynamics), heat, work and internal energy. First law of thermodynamics, isothermal and adiabatic processes. Second law of thermodynamics: reversible and irreversible processes</p> <p><b>Unit IX: Behaviour of Perfect Gases and Kinetic Theory of Gases</b> <b>08 Periods</b> <b>Chapter-13: Kinetic Theory</b> Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases -assumptions, concept of pressure. Kinetic interpretation of temperature;</p>	<p><b>Chapter-11 Thermal properties matter</b> Heat, temperature,</p> <p>Heat transfer-conduction, convection and radiation</p> <p><b>Chapter-12 Thermodynamics</b></p> <p>Heat engine and refrigerator.</p>
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<p>rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.</p> <p><b>Unit X: Oscillations and Waves</b> <b>26 Periods</b></p> <p><b>Chapter–14: Oscillations</b> Periodic motion - time period, frequency, displacement as a function of time, periodic functions. Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a loaded spring- restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of expression for its time period. Free, forced and damped oscillations (qualitative ideas only), resonance.</p> <p><b>Chapter–15: Waves</b> Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, <b>fundamental mode and harmonics</b>, Beats, <b>Doppler effect</b>.</p> <p><b>PRACTICALS Total Periods: 60</b> The record, to be submitted by the students, at the time of their annual examination, has to include:</p> <ul style="list-style-type: none"> <li>• Record of at least 12 Experiments [with 6 from each section], to be performed by the students.</li> <li>• Record of at least 6 Activities [with 3 each from section A and section B], to be performed by the students.</li> <li>• <b>Report of the project to be carried out by the students.</b></li> </ul> <p><b>EVALUATION SCHEME</b></p> <ul style="list-style-type: none"> <li>• Time Allowed: Three hours Max. Marks: 30</li> <li>• Two experiments one from each section 7+7 Marks</li> </ul>	<p>rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.</p> <p><b>Unit X: Oscillations and Waves</b> <b>23 Periods</b></p> <p><b>Chapter–14: Oscillations</b> Periodic motion - time period, frequency, displacement as a function of time, periodic functions. Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a loaded spring-restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of expression for its time period. Free, forced and damped oscillations (qualitative ideas only), resonance.</p> <p><b>Chapter–15: Waves</b> Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, Beats</p> <p><b>PRACTICALS Total Periods: 32</b> The record, to be submitted by the students, at the time of their annual examination, has to include:</p> <ul style="list-style-type: none"> <li>• Record of at least 8 Experiments 4 from each section, to be performed by the students</li> <li>• Record of at least 6 Activities [with 3 each from section A and section B], to be demonstrated by teacher.</li> </ul> <p><b>EVALUATION SCHEME</b></p> <ul style="list-style-type: none"> <li>• Time Allowed: Three hours Max. Marks: 30</li> <li>• Two experiments one from each section (8+8)Marks</li> </ul>	<p style="text-align: center;"><b>Chapter-15 Waves</b></p> <p><b>Fundamental mode and harmonics, Doppler effect.</b></p> <p><b>Practicals:</b> <b>No investigatory project and Activity to be demonstrated 8 experiments ( clubbed based on skills ) in place of 12</b></p>
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<ul style="list-style-type: none"> <li>• Practical record (experiment and activities) 5 Marks</li> <li>• <b>One activity from any section 3 Marks</b></li> <li>• <b>Investigatory Project 3 Marks</b></li> <li>• Viva on experiments, activities and <b>project 5 Marks</b></li> </ul> <p style="text-align: right;">Total 30 Marks</p> <p><b>SECTION–A</b> <b>Experiments</b></p> <ol style="list-style-type: none"> <li>1. To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Callipers and hence find its volume.</li> <li>2. To measure diameter of a given wire and thickness of a given sheet using screw gauge.</li> <li>3. To determine volume of an irregular lamina using screw gauge.</li> <li>4. To determine radius of curvature of a given spherical surface by a spherometer.</li> <li>5. To determine the mass of two different objects using a beam balance.</li> <li>6. To find the weight of a given body using parallelogram law of vectors.</li> <li>7. Using a simple pendulum, plot its L-T<sup>2</sup> graph and use it to find the effective length of second's pendulum.</li> <li>8. To study variation of time period of a simple pendulum of a given length by taking bobs of same size but different masses and interpret the result.</li> <li>9. To study the relationship between force of limiting friction and normal reaction and to find the co- efficient of friction between a block and a horizontal surface.</li> <li>10. To find the downward force, along an inclined plane, acting on a roller due to gravitational pull of the</li> </ol>	<ul style="list-style-type: none"> <li>• Practical record (experiment and activities) 7Marks</li> <li>• Viva on experiments, and activities 7 Marks</li> </ul> <p style="text-align: right;">Total 30 Marks</p> <p><b>SECTION–A</b> <b>Experiments</b></p> <ol style="list-style-type: none"> <li>1. To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Callipers and hence find its volume.</li> <li>2. To measure diameter of a given wire and thickness of a given sheet using screw gauge.</li> </ol> <p>OR</p> <ol style="list-style-type: none"> <li>To determine volume of an irregular lamina using screw gauge.</li> <li>3. To determine radius of curvature of a given spherical surface by a spherometer.</li> <li>4. To determine the mass of two different objects using a beam balance.</li> <li>5. To find the weight of a given body using parallelogram law of vectors.</li> <li>6. Using a simple pendulum, plot its L-T<sup>2</sup> graph and use it to find the effective length of second's pendulum.</li> </ol> <p>OR</p> <ol style="list-style-type: none"> <li>To study variation of time period of a simple pendulum of a given length by taking bobs of same size but different masses and interpret the result.</li> <li>7. To study the relationship between force of limiting friction and normal reaction and to find the co- efficient of friction between a block and a horizontal surface.</li> </ol> <p>OR</p> <ol style="list-style-type: none"> <li>To find the downward force, along an inclined plane, acting on a roller due to gravitational pull of the earth</li> </ol>	
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<p>earth and study its relationship with the angle of inclination <math>\theta</math> by plotting graph between force and <math>\sin\theta</math>.</p> <p style="text-align: center;"><b>Activities</b></p> <ol style="list-style-type: none"> <li>1. To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm.</li> <li>2. To determine mass of a given body using a metre scale by principle of moments.</li> <li>3. To plot a graph for a given set of data, with proper choice of scales and error bars.</li> <li>4. To measure the force of limiting friction for rolling of a roller on a horizontal plane.</li> <li>5. To study the variation in range of a projectile with angle of projection.</li> <li>6. To study the conservation of energy of a ball rolling down on an inclined plane (using a double inclined plane).</li> <li>7. To study dissipation of energy of a simple pendulum by plotting a graph between square of amplitude and time.</li> </ol> <p style="text-align: center;"><b>SECTION-B Experiments</b></p> <ol style="list-style-type: none"> <li>1. To determine Young's modulus of elasticity of the material of a given wire.</li> <li>2. To find the force constant of a helical spring by plotting a graph between load and extension.</li> <li>3. To study the variation in volume with pressure for a sample of air at constant temperature by plotting graphs between P and V, and between P and 1/V.</li> <li>4. To determine the surface tension of water by capillary rise method.</li> <li>5. To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.</li> <li>6. To study the relationship between the temperature of a hot body and time by plotting a cooling curve.</li> </ol>	<p>and study its relationship with the angle of inclination <math>\theta</math> by plotting graph between force and <math>\sin\theta</math>.</p> <p style="text-align: center;"><b>Activities</b></p> <ol style="list-style-type: none"> <li>1. To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm.</li> <li>2. To determine mass of a given body using a metre scale by principle of moments.</li> <li>3. To plot a graph for a given set of data, with proper choice of scales and error bars.</li> <li>4. To measure the force of limiting friction for rolling of a roller on a horizontal plane.</li> <li>5. To study the variation in range of a projectile with angle of projection.</li> <li>6. To study the conservation of energy of a ball rolling down on an inclined plane (using a double inclined plane).</li> <li>7. To study dissipation of energy of a simple pendulum by plotting a graph between square of amplitude and time.</li> </ol> <p style="text-align: center;"><b>SECTION-B Experiments</b></p> <ol style="list-style-type: none"> <li>1. To determine Young's modulus of elasticity of the material of a given wire. OR To find the force constant of a helical spring by plotting a graph between load and extension.</li> <li>2. To study the variation in volume with pressure for a sample of air at constant temperature by plotting graphs between P and V, and between P and 1/V.</li> <li>3. To determine the surface tension of water by capillary rise method. OR To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.</li> <li>3. To study the relationship between the temperature of a hot body and time by plotting a cooling curve.</li> </ol>	
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<p>7. To determine specific heat capacity of a given solid by method of mixtures.</p> <p>8. To study the relation between frequency and length of a given wire under constant tension using sonometer.</p> <p>9. To study the relation between the length of a given wire and tension for constant frequency using sonometer.</p> <p>10. To find the speed of sound in air at room temperature using a resonance tube by two resonance positions.</p> <p style="text-align: center;"><b>Activities</b></p> <p>1. To observe change of state and plot a cooling curve for molten wax.</p> <p>2. To observe and explain the effect of heating on a bi-metallic strip.</p> <p>3. To note the change in level of liquid in a container on heating and interpret the observations.</p> <p>4. To study the effect of detergent on surface tension of water by observing capillary rise.</p> <p>5. To study the factors affecting the rate of loss of heat of a liquid.</p> <p>6. To study the effect of load on depression of a suitably clamped metre scale loaded at (i) its end (ii) in the middle.</p> <p>7. To observe the decrease in pressure with increase in velocity of a</p>	<p>4. To determine specific heat capacity of a given solid by method of mixtures.</p> <p>5. To study the relation between frequency and length of a given wire under constant tension using sonometer.</p> <p style="text-align: center;">OR</p> <p>To study the relation between the length of a given wire and tension for constant frequency using sonometer.</p> <p>7. To find the speed of sound in air at room temperature using a resonance tube by two resonance positions.</p> <p style="text-align: center;"><b>Activities</b></p> <p>1. To observe change of state and plot a cooling curve for molten wax.</p> <p>2. To observe and explain the effect of heating on a bi-metallic strip.</p> <p>3. To note the change in level of liquid in a container on heating and interpret the observations.</p> <p>4. To study the effect of detergent on surface tension of water by observing capillary rise.</p> <p>5. To study the factors affecting the rate of loss of heat of a liquid.</p> <p>6. To study the effect of load on depression of a suitably clamped metre scale loaded at (i) its end (ii) in the middle.</p> <p>7. To observe the decrease in pressure with increase in velocity of a fluid.</p>	
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<b>ORIGINAL SYLLABUS 2020-21</b>	<b>REVISED SYLLABUS 2020-21</b>	<b>DELETED PORTIONS</b>
<p><b>Unit I: Electrostatics 24 Periods</b> <b>Chapter-1: Electric Charges and Fields</b> Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet <b>and uniformly charged thin spherical shell (field inside and outside).</b></p> <p><b>Chapter-2: Electrostatic Potential and Capacitance</b> Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field. Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarisation, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor.</p> <p><b>Unit II: Current Electricity 18 Periods</b> <b>Chapter-3: Current Electricity</b> Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation</p>	<p><b>Unit I: Electrostatics 23 Periods</b> <b>Chapter-1: Electric Charges and Fields</b> Electric Charges; Conservation of charge, Coulomb's law-force between two-point charges, forces between multiple charges; superposition principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet</p> <p><b>Chapter-2: Electrostatic Potential and Capacitance</b> Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field. Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarisation, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor.</p> <p><b>Unit II: Current Electricity 15 Periods</b> <b>Chapter-3: Current Electricity</b> Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation</p>	<p><b>Chapter-1 Electric charges and fields</b></p> <p><b>uniformly charged thin spherical shell (field inside and outside).</b></p> <p><b>Chapter-3 Current Electricity</b></p>



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<p>with electric current; Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity, <b>Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors;</b> temperature dependence of resistance. Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's laws and simple applications, Wheatstone bridge, metre bridge. Potentiometer - principle and its applications to measure potential difference and for comparing EMF of two cells; measurement of internal resistance of a cell.</p> <p><b>Unit III: Magnetic Effects of Current and Magnetism 22 Periods</b></p> <p><b>Chapter-4: Moving Charges and Magnetism</b></p> <p>Concept of magnetic field, Oersted's experiment. Biot - Savart law and its application to current carrying circular loop.</p> <p>Ampere's law and its applications to infinitely long straight wire. Straight and toroidal solenoids (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields, <b>Cyclotron.</b></p> <p>Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-definition of ampere, torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.</p> <p><b>Chapter-5: Magnetism and Matter</b></p> <p>Current loop as a magnetic dipole and its magnetic dipole moment, magnetic dipole moment of a</p>	<p>with electric current; Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity;</p> <p>temperature dependence of resistance. Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's laws and simple applications, Wheatstone bridge, metre bridge(qualitative ideas only) Potentiometer - principle and its applications to measure potential difference and for comparing EMF of two cells; measurement of internal resistance of a cell(qualitative ideas only)</p> <p><b>Unit III: Magnetic Effects of Current and Magnetism 16 Periods</b></p> <p><b>Chapter-4: Moving Charges and Magnetism</b></p> <p>Concept of magnetic field, Oersted's experiment. Biot - Savart law and its application to current carrying circular loop.</p> <p>Ampere's law and its applications to infinitely long straight wire. Straight and toroidal solenoids (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields</p> <p>Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-definition of ampere, torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.</p> <p><b>Chapter-5: Magnetism and Matter</b></p> <p>Current loop as a magnetic dipole and its magnetic dipole moment, magnetic dipole moment of a</p>	<p><b>Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors</b></p> <p><b>Chapter-4 Moving Charges and Magnetism</b></p> <p><b>Cyclotron</b></p> <p><b>Chapter-5 Magnetism and Matter</b></p>
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<p>revolving electron, magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis, torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; earth's magnetic field and magnetic elements. Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths, permanent magnets.</p> <p><b>Unit IV: Electromagnetic Induction and Alternating Currents 20 Periods</b> <b>Chapter-6: Electromagnetic Induction</b> Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Eddy currents. Self and mutual induction. <b>Chapter-7: Alternating Current</b> Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits, power factor, wattless current. AC generator and transformer.</p> <p><b>Unit V: Electromagnetic waves 04 Periods</b> <b>Chapter-8: Electromagnetic Waves</b> Basic idea of displacement current, Electromagnetic waves, their characteristics, their Transverse nature (qualitative ideas only). Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.</p> <p><b>Unit VI: Optics 27 Periods</b> <b>Chapter-9: Ray Optics and Optical Instruments</b> Ray Optics: Reflection of light, spherical mirrors, mirror formula,</p>	<p>magnetic dipole moment of a revolving electron,</p> <p>bar magnet as an equivalent solenoid, magnetic field lines; earth's magnetic field and magnetic elements.</p> <p><b>Unit IV: Electromagnetic Induction and Alternating Currents 19 Periods</b> <b>Chapter-6: Electromagnetic Induction</b> Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Eddy currents. Self and mutual induction. <b>Chapter-7: Alternating Current</b> Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits  AC generator and transformer.</p> <p><b>Unit V: Electromagnetic waves 2 Periods</b> <b>Chapter-8: Electromagnetic Waves</b> Electromagnetic waves, their characteristics, their Transverse nature (qualitative ideas only). Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.</p> <p><b>Unit VI: Optics 18 Periods</b> <b>Chapter-9: Ray Optics and Optical Instruments</b> Ray Optics:</p>	<p>magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis, torque on a magnetic dipole (bar magnet) in a uniform magnetic field;</p> <p>Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths, permanent magnets.</p> <p><b>Chapter-7 Alternating Current</b></p> <p>power factor, wattless current.</p> <p><b>Chapter 8 Electromagnetic Waves</b> Basic idea of displacement current,</p> <p><b>Chapter 9 Ray Optics and Optical Instruments</b> Reflection of light, spherical mirrors,</p>
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<p>refraction of light, total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism.</p> <p>Scattering of light - blue colour of sky and reddish appearance of the sun at sunrise and sunset.</p> <p>Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.</p> <p><b>Chapter-10: Wave Optics</b></p> <p>Wave optics: Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light, diffraction due to a single slit, width of central maximum, resolving power of microscope and astronomical telescope, polarisation, plane polarised light, Brewster's law, uses of plane polarised light and Polaroids.</p> <p><b>Unit VII: Dual Nature of Radiation and Matter 08 Periods</b></p> <p><b>Chapter-11: Dual Nature of Radiation and Matter</b></p> <p>Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light. Experimental study of photoelectric effect Matter waves-wave nature of particles, de-Broglie relation, Davisson-Germer experiment (experimental details should be omitted; only conclusion should be explained).</p>	<p>Refraction of light, total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism.</p> <p>Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.</p> <p><b>Chapter-10: Wave Optics</b></p> <p>Wave optics: Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light, diffraction due to a single slit, width of central maximum</p> <p><b>Unit VII: Dual Nature of Radiation and Matter 7 Periods</b></p> <p><b>Chapter-11: Dual Nature of Radiation and Matter</b></p> <p>Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light. Experimental study of photoelectric effect Matter waves-wave nature of particles, de-Broglie relation</p>	<p>(recapitulation) mirror formula ,</p> <p>Scattering of light - blue colour of sky and reddish appearance of the sun at sunrise and sunset.</p> <p>resolving power of microscope and astronomical telescope, polarisation, plane polarised light, Brewster's law, uses of plane polarised light and Polaroids.</p> <p><b>Chapter-11 Dual Nature of radiation and matter</b></p> <p>Davisson-Germer experiment</p>
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<p><b>Unit VIII: Atoms and Nuclei 15 Periods</b>  <b>Chapter–12: Atoms</b>          Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.  <b>Chapter–13: Nuclei</b>          Composition and size of nucleus, <b>Radioactivity, alpha, beta and gamma particles/rays and their properties; radioactive decay law, half life and mean life.</b>          Mass-energy relation, mass defect; <b>binding energy per nucleon and its variation with mass number;</b> nuclear fission, nuclear fusion.  <b>Unit IX: Electronic Devices 12 Periods</b>  <b>Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits</b>          Energy bands in conductors, semiconductors and insulators (qualitative ideas only)          Semiconductor diode - I-V characteristics in forward and reverse bias, diode as a rectifier; Special purpose p-n junction diodes: LED, photodiode, solar cell and <b>Zener diode and their characteristics, zener diode as a voltage regulator.</b>  <b>PRACTICALS (Total Periods 60)</b>          The record to be submitted by the students at the time of their annual examination has to include:  <input type="checkbox"/> Record of at least 12 Experiments [with 6 from each section], to be performed by the students.  <input type="checkbox"/> Record of at least 6 Activities [with 3 each from section A and section B], to be performed by the students.  <input type="checkbox"/> <b>The Report of the project to be carried out by the students.</b>  <b>Evaluation Scheme</b>          Time Allowed: Three hours Max. Marks: 30</p>	<p><b>Unit VIII: Atoms and Nuclei 11 Periods</b>  <b>Chapter–12: Atoms</b>          Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.  <b>Chapter–13: Nuclei</b>          Composition and size of nucleus          Nuclear force           Mass-energy relation, mass defect, nuclear fission, nuclear fusion.  <b>Unit IX: Electronic Devices 7 Periods</b>  <b>Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits</b>          Energy bands in conductors, semiconductors and insulators (qualitative ideas only)          Semiconductor diode - I-V characteristics in forward and reverse bias, diode as a rectifier; Special purpose p-n junction diodes: LED, photodiode, solar cell.   <b>PRACTICALS Total Periods: 32</b>          The record to be submitted by the students at the time of their annual examination has to include:  <input type="checkbox"/> Record of at least 8 Experiments [with 4 from each section], to be performed by the students.  <input type="checkbox"/> Record of at least 6 Activities [with 3 each from section A and section B], to be demonstrated by teacher   <b>Evaluation Scheme</b>          Time Allowed: Three hours Max. Marks: 30</p>	<p><b>Chapter 13 Nuclei</b>  <b>Radioactivity, alpha, beta and gamma particles/rays and their properties; radioactive decay law, half life and mean life binding energy per nucleon and its variation with mass number</b>   <b>Chapter 14 Semiconductor Electronics: Materials, Devices and Simple Circuits</b>   <b>Zener diode and their characteristics, zener diode as a voltage regulator.</b>  <b>Practicals:</b>   <b>No investigatory project and Activity to be demonstrated</b>          8 experiments ( clubbed based on skills ) in place of 12</p>
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<p>Two experiments one from each section 7+7 Marks Practical record [experiments and activities] 5 Marks <b>One activity from any section 3 Marks</b> <b>Investigatory Project 3 Marks</b> Viva on experiments, activities and project 5 Marks Total 30 marks Experiments SECTION–A 1. To determine resistivity of two / three wires by plotting a graph for potential difference versus current. 2. To find resistance of a given wire / standard resistor using metre bridge.  3. To verify the laws of combination (series) of resistances using a metre bridge. OR To verify the laws of combination (parallel) of resistances using a metre bridge. 4. To compare the EMF of two given primary cells using potentiometer.  5. To determine the internal resistance of given primary cell using potentiometer. 6. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit. 7. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same. OR To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same. 8. To find the frequency of AC mains with a sonometer.</p>	<p>Two experiments one from each section 8+8 marks Practical record [experiments and activities] 7 marks  Viva on experiments, and activities 7 marks Total 30 marks Experiments SECTION–A 1. To determine resistivity of two / three wires by plotting a graph for potential difference versus current. 2. To find resistance of a given wire / standard resistor using metre bridge. OR To verify the laws of combination (series) of resistances using a metre bridge. OR To verify the laws of combination (parallel) of resistances using a metre bridge. 3. To compare the EMF of two given primary cells using potentiometer. OR To determine the internal resistance of given primary cell using potentiometer. 4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit. 5. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same. OR To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same. 6. To find the frequency of AC mains with a sonometer.</p>	
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<p><b>Activities</b></p> <ol style="list-style-type: none"> <li>To measure the resistance and impedance of an inductor with or without iron core.</li> <li>To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.</li> <li>To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.</li> <li>To assemble the components of a given electrical circuit.</li> <li>To study the variation in potential drop with length of a wire for a steady current.</li> <li>To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.</li> </ol> <p><b>Experiments SECTION-B</b></p> <ol style="list-style-type: none"> <li><b>To find the value of <math>v</math> for different values of <math>u</math> in case of a concave mirror and to find the focal length.</b></li> <li>To find the focal length of a convex mirror, using a convex lens.</li> <li>To find the focal length of a convex lens by plotting graphs between <math>u</math> and <math>v</math> or between <math>1/u</math> and <math>1/v</math>.</li> <li>To find the focal length of a concave lens, using a convex lens.</li> <li>To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.</li> <li>To determine refractive index of a glass slab using a travelling microscope.</li> <li>To find refractive index of a liquid by using convex lens and plane mirror.</li> </ol>	<p><b>Activities</b></p> <ol style="list-style-type: none"> <li>To measure the resistance and impedance of an inductor with or without iron core.</li> <li>To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.</li> <li>To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.</li> <li>To assemble the components of a given electrical circuit.</li> <li>To study the variation in potential drop with length of a wire for a steady current.</li> <li>To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.</li> </ol> <p><b>Experiments SECTION-B</b></p> <ol style="list-style-type: none"> <li>To find the focal length of a convex lens by plotting graphs between <math>u</math> and <math>v</math> or between <math>1/u</math> and <math>1/v</math>.</li> <li>To find the focal length of a convex mirror, using a convex lens. OR To find the focal length of a concave lens, using a convex lens.</li> <li>To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.</li> <li>To determine refractive index of a glass slab using a travelling microscope.</li> <li>To find refractive index of a liquid by using convex lens and plane mirror.</li> </ol>	<p><b>Experiments SECTION-B</b> To find the value of <math>v</math> for different values of <math>u</math> in case of a concave mirror and to find the focal length.</p>
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<p>8. To draw the I-V characteristic curve for a p-n junction diode in forward bias and reverse bias.</p> <p>9. To draw the characteristic curve of a zener diode and to determine its reverse breaks down voltage.</p> <p><b>Activities</b></p> <ol style="list-style-type: none"> <li>1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.</li> <li>2. Use of multimeter to see the unidirectional flow of current in case of a diode and an LED and check whether a given electronic component (e.g., diode) is in working order.</li> <li>3. To study effect of intensity of light (by varying distance of the source) on an LDR.</li> <li>4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.</li> <li>5. To observe polarization of light using two Polaroids.</li> <li>6. To observe diffraction of light due to a thin slit.</li> <li>7. To study the nature and size of the image formed by a (i) convex lens, (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).</li> <li>8. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.</li> </ol> <p><b>Suggested Investigatory Projects</b></p> <ol style="list-style-type: none"> <li>1. To study various factors on which the internal resistance/EMF of a cell depends.</li> <li>2. To study the variations in current flowing in a circuit containing an LDR because of a variation in             <ol style="list-style-type: none"> <li>(a) the power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance).</li> </ol> </li> </ol>	<p>6. To draw the I-V characteristic curve for a p-n junction diode in forward bias and reverse bias.</p> <p><b>Activities</b></p> <ol style="list-style-type: none"> <li>1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.</li> <li>2. Use of multimeter to see the unidirectional flow of current in case of a diode and an LED and check whether a given electronic component (e.g., diode) is in working order.</li> <li>3. To study effect of intensity of light (by varying distance of the source) on an LDR.</li> <li>4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.</li> <li>5. To observe polarization of light using two Polaroids.</li> <li>6. To observe diffraction of light due to a thin slit.</li> <li>7. To study the nature and size of the image formed by a (i) convex lens, (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).</li> <li>8. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.</li> </ol>	<p>To draw the characteristic curve of a zener diode and to determine its reverse breaks down voltage.</p>
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<p>(b) the distance of a incandescent lamp (of fixed power) used to 'illuminate' the LDR.</p> <p>3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, an equi convex lens (made from a glass of known refractive index) and an adjustable object needle.</p> <p>4. To design an appropriate logic gate combination for a given truth table.</p> <p>5. To investigate the relation between the ratio of (i) output and input voltage and (ii) number of turns in the secondary coil and primary coil of a self-designed transformer.</p> <p>6. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.</p> <p>7. To estimate the charge induced on each one of the two identical styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law.</p> <p>8. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/(bulb) in a circuit fed up by an A.C. source of adjustable frequency.</p> <p>9. To study the earth's magnetic field using a tangent galvanometer.</p>		
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