R.S.M.PUBLIC SCHOOL SUPAUL

Revised Academic Curriculum for the session 2020-21

SCIENCE (Code No. 086)

Class: X (2020-21)

General Instructions:-

1. There will be an Annual Examination based on the entire syllabus.
2. The Annual Examination will be of 80 marks and 20 marks weightage shall be for Internal Assessment.
3. For Internal Assessment:

a) There will be Periodic Assessment that would include:

- For 5 marks- Three periodic tests conducted by the school. Average of the best two tests to be taken that will have a weightage of 05 marks towards the final result.
- For 5 marks- Diverse methods of assessment as per the need of the class dynamics and curriculum transaction. These may include - short tests, oral test, quiz, concept maps, projects, posters, presentations, enquiry based scientific investigations etc. This will also have a weightage of 05 marks towards the final result.

b) Subject Enrichment in the form of Practical / Laboratory work should be done throughout the year and the student should maintain record of the same. Practical Assessment should be continuous. There will be weightage of 5 marks towards the final result. All practicals listed in the syllabus must be completed.

c) Portfolio to be prepared by the student- This would include classwork and other sample of student work and will carry a weightage of 5 marks towards the final results.

COURSE STRUCTURE CLASS - X
(Annual Examination)

Mark: 80

Unit No.	Unit	Marks
I	Chemical Substances - Nature and Behaviour	26
II	World of living	23
III	Natural Phenomena	12
IV	Effects of Current	14
V	Natural Resources	05
	Total	80
	Internal Assessment	20
	Grand Total	100

REVISED SYLLABUS(CHEMISTRY)	DELETED PART(CHEMISTRY)
Theme: Materials **Unit I:Chemical Substances - Nature and Behaviour** **Chemical reactions**: Chemical equation, Balanced chemical equation, implications of a balanced chemical equation, types of chemical reactions: combination, decomposition, displacement, double displacement, precipitation, neutralization, oxidation and reduction. **Acids, bases and salts**: Their definitions in terms of furnishing of H+ and OH- ions, General properties, examples and uses, concept of pH scale (Definition relating to logarithm not required), importance of pH in everyday life; preparation and uses of Sodium Hydroxide, Bleaching powder, Baking soda, Washing soda and Plaster of Paris. **Metals and nonmetals**: Properties of metals and non-metals; Reactivity series; Formation and properties of ionic compounds. **Carbon compounds**: Covalent bonding in carbon compounds. Versatile nature of carbon.Homologous series. **Periodic classification of elements**: Need for classification, early attempts at classification of elements (Dobereiner's Triads, Newland's Law of Octaves, Mendeleev's Periodic Table), Modern periodic table, gradation in properties, valency, atomic number, metallic and non-metallic properties.	• Under Unit I: Chemical Substances - Nature and Behaviour of Metals and Non-metals: Basic Metallurgical processes; Corrosion and its prevention. Carbon and its Compounds: Nomenclature of carbon compounds containing functional groups (halogens, alcohol, ketones, aldehydes, alkanes and alkynes), difference between saturated hydro carbons and unsaturated hydrocarbons. Chemical properties of carbon compounds (combustion, oxidation, addition and substitution reaction). Ethanol and Ethanoic acid (only properties and uses), soaps and detergents.

REVISED SYLLABUS(BIOLOGY)	DELETED PART(BIOLOGY)
Theme: The World of the Living **Unit II: World of Living** **Life processes**: 'Living Being'. Basic concept of nutrition, respiration, transport and excretion in plants and animals. **Reproduction:** Reproduction in animals and plants (asexual and sexual) reproductive healthneed and methods of family planning. Safe sex vs HIV/AIDS. Child bearing and women's health. **Heredity**: Heredity; Mendel's contribution- Laws for inheritance of traits: Sex determination: brief introduction **Theme: Natural Resources** **Unit V: Natural Resources** **Our environment**: Eco-system, Environmental problems, Ozone depletion, waste production and their solutions. Biodegradable and non-biodegradable substances.	• **Under Unit II**: World of Living o Control and co-ordination in animals and plants: Tropic movements in plants; Introduction of plant hormones; Control and co-ordination in animals: Nervous system; Voluntary, involuntary and reflex action; Chemical co-ordination: animal hormones. o Heredity and Evolution:Basic concepts of evolution. • **Under Unit V**: Natural Resources. Sources of energy: Different forms of energy, conventional and nonconventional sources of energy: Fossil fuels, solar energy; biogas; wind, water and tidal energy; Nuclear energy. Renewable versus non-renewable sources of Energy.

REVISED SYLLABUS(PHYSICS)

Theme: Natural Phenomena

Unit III: Natural Phenomena

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

Refraction; Laws of refraction, refractive index.

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

Refraction of light through a prism, dispersion of light, scattering of light, applications in daily life.

Theme: How Things Work

Unit IV: Effects of Current

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

DELETED PART(PHYSICS)

- Under Unit III: Natural Phenomena o The Human Eye and the Colourful World: Functioning of a lens in Human eye, defects of vision and their corrections, applications of spherical mirrors and lenses.

- Under Unit IV: Effects of Current o Magnetic Effects of Electric Current: Electric Generator, Direct current. Alternating current: frequency of AC. Advantage of AC over DC. Domestic electric circuits.

Magnetic effects of current : Magnetic field, field lines, field due to a current carrying conductor, field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's Left Hand Rule, Electric Motor, Electromagnetic induction. Induced potential difference, Induced current. Fleming's Right Hand Rule.	

ONLY FOR INTERNAL ASSESSMENT

Note: ***Learners are assigned to read the below listed part of Unit V. They can be encouraged to prepare a brief write up on any one concept of this Unit in their Portfolio. This may be an assessment for Internal Assessment and credit may be given (Periodic assessment/Portfolio). This portion of the Unit is not to be assessed in the year-end examination.***

Management of natural resources: Conservation and judicious use of natural resources. Forest and wild life; Coal and Petroleum conservation. Examples of people's participation for conservation of natural resources. Big dams: advantages and limitations; alternatives, if any. Water harvesting. Sustainability of natural resources.

PRACTICALS

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

LIST OF EXPERIMENTS:

1. Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with
a) Litmus solution (Blue/Red)
Unit-I
b) Zinc metal
c) Solid sodium carbonate

2. Performing and observing the following reactions and classifying them into:
Unit-I
A. Combination reaction
B. Decomposition reaction
C. Displacement reaction
D. Double displacement reaction
(i) Action of water on quicklime
(ii) Action of heat on ferrous sulphate crystals
(iii) Iron nails kept in copper sulphate solution
(iv) Reaction between sodium sulphate and barium chloride solutions

3. Observing the action of Zn, Fe, Cu and Al metals on the following salt solutions:
Unit-I
i) $ZnSO_4$(aq)
ii) $FeSO_4$(aq)
iii) $CuSO_4$(aq)
iv) $Al_2(SO_4)_3$(aq)
Arranging Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity based on the above result.

4. Studying the dependence of potential difference (V) across a

PRACTICALS(DELETED PART)

1. Finding the pH of the following samples by using pH paper/universal indicator: Dilute Hydrochloric Acid and Dilute NaOH solution. Dilute Ethanoic Acid solution, Lemon juice, Water , Dilute Hydrogen Carbonate solution.

2. Determination of the equivalent resistance of two resistors when connected in series and parallel.

3. Preparing a temporary mount of a leaf peel to show stomata.

4. Study of the following properties of acetic acid (ethanoic acid): Odour and solubility in water, effect on litmus , reaction with Sodium Hydrogen Carbonate.

5. Study of the comparative cleaning capacity of a sample of soap in soft and hard water.

6. Finding the image distance for varying object distances in case of a convex lens and drawing corresponding ray diagrams to show the nature of image formed.

7. Identification of the different parts of an embryo of a dicot seed (Pea, gram or red kidney bean).

resistor on the current (I) passing through it and determining its resistance. Also plotting a graph between V and I.
Unit-IV

5. Experimentally show that carbon dioxide is given out during respiration.
Unit-II

6. Determination of the focal length of (i) Concave mirror and (ii) Convex lens by obtaining the image of a distant object. Unit-III

7. Tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. Measure the angle of incidence, angle of refraction, angle of emergence and interpret the result.
Unit - III

8. Studying (a) binary fission in *Amoeba,* and (b) budding in yeast and Hydra with the help of prepared slides. Unit-II

9. Tracing the path of the rays of light through a glass prism. Unit-III

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