

Class : 12

Subject : Mathematics

As the regular teaching – learning in schools, during the session 2020-21, has widely been affected due to the Covid – 19 pandemic, the subject experts committee, after due consideration, has recommended to reduce the syllabus by 30% in the following manner :

Almost 30% reduced syllabus :-

Unit-I Relations and functions

Relations and functions- Composite functions, Inverse of a function, Binary Operation.

Inverse Trigonometric function- Graphs of inverse Trigonometric functions, Elementary Properties of inverse Trigonometric functions.

Unit-III Calculus

Continuity and differentiability –

Roll's and Lagrange's mean value theorems (without proof) and their geometric interpretations.

Unit- IV Vectors and three Dimensional Geometry

Vectors- Scalar Triple Products of Vectors

Three Dimensional Geometry-

Angle between (i) Two lines, (ii) Two planes, (iii) A line and a plane.

Unit-VI Probability

Mean and variance of random variable, Bernoulli trials and Binomial distributions.

Class : 12
Subject : Mathematics
Only Paper

Time : 3 hours

Marks : 70

Sr.No.	Name of Unit	Marks
1	Relations and functions	10
2	Algebra	13
3	Calculus	44
4	Vectors and three dimensional Geometry	17
5	Linear Programming	06
6	Probability	10
	Total	100

Approximately -70% Syllabus

Unit I : Relations and Functions

Marks : 10

1) Relations and Functions

Types of relations: Reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.

2) Inverse Trigonometric Functions

Definition, range, domain, principal value branches.

Unit-II: Algebra

Marks : 13

1) Matrices

Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication.

Non- commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2) Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

2) Determinants

Determinant of a square matrix (up to 3×3 matrices), properties of determinants, minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

Unit-III: Calculus

Marks : 44

1- Continuity and Differentiability

Continuity and differentiability, derivative of composite functions, chain rule, derivative of inverse trigonometric functions, derivative of implicit functions. Concept of exponential and logarithmic functions.

Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.

2- Applications of Derivatives

Applications of derivatives: rate of change of bodies, increasing/decreasing functions, tangents and normals, use of derivatives in approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).

3- Integrals

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them.

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}$$

$$\int \frac{px + q}{ax^2 + bx + c} dx, \int \frac{px + q}{\sqrt{ax^2 + bx + c}} dx, \int \sqrt{a^2 \pm x^2} dx, \int \sqrt{x^2 - a^2} dx$$

$$\int \sqrt{ax^2 + bx + c} dx, \int (px + q)\sqrt{ax^2 + bx + c} dx$$

Definite integrals as a limit of a sum. Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

4- Applications of the Integrals

Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only), Area between any of the two above said curves (the region should be clearly identifiable).

5- Differential Equations

Definition, order and degree, general and particular solutions of a differential equation. formation of differential equation whose general solution is given. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree.

Solutions of linear differential equation of the type:

$$(dy/dx) + py = q, \text{ where } p \text{ and } q \text{ are functions of } x \text{ or constants.}$$

$$(dx/dy) + px = q, \text{ where } p \text{ and } q \text{ are functions of } y \text{ or constants.}$$

Unit-IV: Vectors and Three-Dimensional Geometry Marks : 17

1- Vectors

Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors.

2- Three - dimensional Geometry

Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Distance of a point from a plane.

Unit-V: Linear Programming

Marks : 06

1- Linear Programming

Introduction, related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

Unit-VI: Probability

Marks : 10

Probability

Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem. Random Variable and its probability distribution.

CHEMISTRY

CLASS 12

As the regular teaching-learning in schools, during the session 2020-21, has widely been affected due to the COVID-19 pandemic, the subject experts committee, after due consideration, has recommended to reduce the syllabus by 30% in the following manner:-

UNIT 1: Solid State

Electrical and magnetic properties. Band theory of metals, conductors, semiconductors and insulators and n and p type semi conductors.

UNIT 2 : Solutions

Abnormal molecular mass, Van't Hoff factor

UNIT 3 : Electrochemistry

Lead accumulator, fuel cells, corrosion, law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells,

UNIT 4 : Chemical Kinetics

Concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation.

UNIT 5 : Surface Chemistry

Emulsion - types of emulsions, catalysis: homogenous and heterogeneous, activity and selectivity of solid catalysts; enzyme catalysis,

UNIT 6 : General Principles and Processes of Isolation of Elements (Entire unit)

Principles and methods of extraction – concentration, oxidation, reduction – electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron.

UNIT 7 : p-Block Elements (Group 15,16,17,18)

Group 15 elements

Oxides of Nitrogen (Structure only);

Phosphorus - allotropic forms, compounds of Phosphorus: Preparation and properties of Halides and Oxo acids (elementary idea only).

Preparation and properties of Phosphine,

Group 16 elements

Sulphuric Acid: industrial process of manufacture

UNIT 8 : d and f Block Elements

Chemical reactivity of lanthanoids.

Actinoids –Electronic configuration, oxidation states and comparison with lanthanoids.

Preparation and properties of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$

UNIT 9 : Coordination Compounds

Structure and stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).

UNIT 10 : Haloalkanes and Haloarenes

Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

UNIT 11 : Alcohols, Phenols and Ethers

Uses with special reference to methanol and ethanol.

UNIT 13 : Amines(Organic compounds having nitrogen)

Cyanide and isocyanide will be mentioned at relevant place in text , Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

UNIT 14 : Biomolecules

Oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen), importance of carbohydrates.

Vitamins– classification and functions. Enzymes.

Hormones - Elementary idea excluding structure.

UNIT 15 : Polymers (Entire chapter)

Classification – Natural and synthetic, method of polymerization (addition and condensation) , Copolymerization, some important polymers : natural and synthetic like polythene, nylon polyesters, Bakelite, rubber, biodegradable and non – biodegradable polymers.

UNIT 16 : Chemistry in Everyday life (Entire chapter)

Chemicals in medicines – analgesics, tranquilizers antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.

Chemicals in food – preservatives, artificial sweetening agents, elementary idea of antioxidants.

Cleansing agents – soaps and detergents, cleansing action.

List of Practicals deleted from syllabus :**Practical syllabus for external evaluation****A. Surface Chemistry**

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

Practical syllabus for internal evaluation**A. Preparation of Organic Compounds**

Preparation of any one of the following compounds

- Acetanilide
- Di-benzal Acetone
- p-Nitroacetanilide

Aniline yellow or 2 - Naphthol Anilinedye

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:
- Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentration of Iodide ions.
 - Reaction between Potassium Iodate, (KIO_3) and Sodium Sulphite: (Na_2SO_3) using starch solution as indicator (clock reaction).

C. Thermo chemistry

Any one of the following experiments:

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

D. Electrochemistry

Variation of cell potential in $\text{Zn}/\text{Zn}^{2+}||\text{Cu}^{2+}/\text{Cu}$ with change in concentration of electrolytes (CuSO_4 or ZnSO_4) at room temperature.

In accordance with the above, the remaining 70 percent of the total syllabus is as follows:

Plan for making question papers:

1.	Multiple choice questions a,b,c,d,e,f	1×6	06
2.	a,b,c,d (each question 02 marks)	2×4	08
3.	a,b,c,d (each question 02 marks)	2×4	08
4.	a,b,c,d (each question 03 marks)	3×4	12
5.	a,b,c,d (each question 04 marks)	4×4	16
6.	a,b (each question 05 marks)	5×2	10
7.	a,b (each question 05 marks)	5×2	10

NOTE –

- Question no. 6 and 7 will also contain optional question.
- At least 08 marks numerical questions should be given.

Unit No.	Title	Marks
I	Solid State	05
II	Solution	07
III	Electrochemistry	05
IV	Chemical Kinetics	05
V	Surface Chemistry	05
VII	P block elements	07
VIII	d and f block elements	04
IX	Coordination compounds	06
X	Haloalkanes and Haloarenes	05

XI	Alcohols, phenols and ethers	05
XII	Aldehydes, ketones and carboxylic acid	06
XIII	Amines (Organic compounds having nitrogen)	04
XIV	Biomolecules	06
	TOTAL	70

NOTE – In this, there will be a single question paper of 70 marks and practical exam of 30 marks. **Min. marks : 23+10 = 33 marks**

Unit I: Solid State

05 marks

Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea). Unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, packing efficiency, voids, number of atoms per unit cell in a cubic unit cell, point defects.

Unit II: Solutions

07 marks

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties.

Unit III: Electrochemistry

05 marks

Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis.

Unit IV: Chemical Kinetics

05 marks

Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order reactions).

Unit V: Surface Chemistry

05 marks

Adsorption - physisorption and chemisorption, factors affecting adsorption of gases on solids, colloidal state: distinction between true solutions, colloids and suspension; lyophilic, lyophobic, multi-molecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation.

Unit VII: p-Block Elements**07 marks**

Group -15 Elements: General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; Nitrogen preparation properties and uses; compounds of Nitrogen: preparation and properties of Ammonia and Nitric Acid.

Group 16 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties, dioxygen: preparation, properties and uses, classification of Oxides, Ozone, Sulphur -allotropic forms; compounds of Sulphur: preparation properties and uses of Sulphur-dioxide, Sulphuric Acid:properties and uses; Oxoacids of Sulphur (Structures only).

Group 17 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens, Preparation, properties and uses of Chlorine and Hydrochloric acid, interhalogen compounds, Oxoacids of halogens (structures only).

Group 18 Elements: General introduction, electronic configuration, occurrence, trends in physical and chemical properties, uses.

Unit VIII: d and f Block Elements**04 marks**

General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals – metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation.

Lanthanoids - Electronic configuration, oxidation states and lanthanoid contraction and its consequences.

Unit IX: Coordination Compounds**06 marks**

Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT.

Unit X: Haloalkanes and Haloarenes.**05 marks**

Haloalkanes: Nomenclature, nature of C–X bond, physical and chemical properties, optical rotation mechanism of substitution reactions.

Haloarenes: Nature of C–X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only).

Unit XI: Alcohols, Phenols and Ethers**05 marks**

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration.

Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

Unit XII: Aldehydes, Ketones and Carboxylic Acids

06 marks

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Unit XIII : Amines (Organic compounds having nitrogen)

04 marks

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

Unit XIV: Biomolecules

06 marks

Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration

Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins.

Nucleic Acids: DNA and RNA.

Practical Syllabus –

External Evaluation

S.No.	Experiment	Marks
1.	Qualitative analysis (salt analysis)	04
2.	Volumetric analysis (simple titration)	04
3.	Content based experiment	03
4.	Viva	04
TOTAL		15

Internal Evaluation

S.No.	Experiment	Marks
1.	Project and viva	08
2.	Class record	04
3.	Content based experiment	03
TOTAL		15

For private students 04 marks of class record will be given in viva.

Practical syllabus for external evaluation –

1. Qualitative analysis

Determination of one cation and one anion in a given salt.

Cation : Pb^{2+} , Cu^{2+} , As^{3+} , Al^{3+} , Fe^{3+} , Mn^{2+} , Zn^{2+} , Co^{2+} , Ni^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Mg^{2+} , NH_4^+

Anions: CO_3^{2-} , S^{2-} , SO_3^{2-} , NO_2^- , SO_4^{2-} , Cl^- , Br^- , I^- , PO_4^{3-} , $(\text{C}_2\text{O}_4)^{2-}$, CH_3COO^- , NO_3^-

Note: Insoluble salts excluded

2. Volumetric analysis

Determination of concentration/ molarity of KMnO_4 solution by titrating it against a standard solution of: i) Oxalic acid, ii) Ferrous Ammonium Sulphate (Students will be required to prepare standard solutions by weighing themselves.)

3. Content based experiment

A. Chromatography

- i) Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of R_f values.
- ii) Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in R_f values to be provided).

B. Tests for the functional groups present in organic compounds: Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (Primary) groups.

C. Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given food stuffs.

Practical syllabus for internal evaluation –

Preparation of Inorganic Compounds:

1. Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum.
2. Preparation of Potassium Ferric Oxalate.

PROJECT –

Scientific investigations involving laboratory testing and collecting information from other sources.

A few suggested Projects :

- Study of the presence of oxalate ions in guava fruit at different stages of ripening.
- Study of quantity of casein present in different samples of milk.
- Preparation of soybean milk and its comparison with the natural milk with respect to curd formation, effect of temperature, etc
- Study of the effect of Potassium Bisulphate as food preservative under various conditions (temperature, concentration, time, etc.)
- Study of digestion of starch by salivary amylase and effect of pH and temperature unit.
- Comparative study of the rate of fermentation of following materials: wheat flour, gram flour, potato juice, carrot juice, etc.
- Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamom).
- Study of common food adulterants in fat, oil, butter, sugar, turmeric powder, chilli powder and pepper.

Note: Any other investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.

BIOLOGY
CLASS XII

Note – In this only one paper of 100 marks in which 70 marks for theory written and 30 marks for practical examinations.

S.No.	Unit	Marks
1.	Reproduction	14
2.	Genetics and Evolution	18
3.	Biology and Human Welfare	14
4.	Biotechnology and its applications	10
5.	Ecology and Environment	14
	Total	70

As the regular teaching-learning in schools, during the session 2020-21, has widely been affected due to the COVID-19 pandemic, the subject experts committee, after due consideration, has recommended to reduce the syllabus by 30% in the following manner:-

Unit-VI Reproduction

Chapter-1: Reproduction in Organisms

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.

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.

Unit-VIII Biology and Human Welfare

Chapter-9: Strategies for Enhancement in Food Production

Improvement in food production: Plant breeding, tissue culture, single cell protein, Biofortification, Apiculture and Animal husbandry.

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; any one case study as success story addressing environmental issue(s).

Reduced Practicals:

A. List of Experiments

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

B. Study/observation of the following (Spotting)

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

In accordance to the above, the remaining 70 percent of the total syllabus is as follows:

Unit-VI Reproduction

14 marks

Chapter-2: Sexual Reproduction in Flowering Plants

Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; outbreeding devices; pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modes apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation.

Chapter-3: Human Reproduction

Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis - spermatogenesis and oogenesis; menstrual cycle; fertilisation, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).

Chapter-4: Reproductive Health

Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control - need and methods, contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (elementary idea for general awareness).

Unit-VII Genetics and Evolution**18 marks****Chapter-5: Principles of Inheritance and Variation**

Heredity and variation: Mendelian inheritance; deviations from Mendelism – incomplete dominance, co- dominance, multiple alleles and inheritance of blood groups, pleiotropy; elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes; Sex determination - in humans, birds and honey bee; linkage and crossing over; sex linked inheritance - haemophilia, colour blindness; Mendelian disorders in humans - thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.

Chapter-6: Molecular Basis of Inheritance

Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central dogma; transcription, genetic code, translation; gene expression and regulation - lac operon; genome and human and rice genome projects; DNA fingerprinting.

Unit-VIII Biology and Human Welfare**14 marks****Chapter-8: Human Health and Diseases**

Pathogens; parasites causing human diseases (malaria, dengue, chickengunia, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; Basic concepts of immunology - vaccines; cancer, HIV and AIDS; Adolescence - drug and alcohol abuse.

Chapter-10: Microbes in Human Welfare

In household food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use.

Unit-IX Biotechnology and Its Applications**10 marks****Chapter-11: Biotechnology - Principles and processes**

Genetic Engineering (Recombinant DNA Technology).

Chapter-12: Biotechnology and its Application

Application of biotechnology in health and agriculture: Human insulin and vaccine production, stem cell technology, gene therapy; genetically modified organisms - Bt crops; transgenic animals; biosafety issues, bio piracy and patents.

Unit-X Ecology and Environment**14 marks****Chapter-13: Organisms and Populations**

Organisms and environment: Habitat and niche, population and ecological adaptations; population interactions - mutualism, competition, predation, parasitism; population attributes - growth, birth rate and death rate, age distribution.

Chapter-15: Biodiversity and its Conservation

Biodiversity-Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, national parks, sanctuaries.

Practicals:**30 marks****A. List of Experiments**

1. Study pollen germination on a slide.
2. Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity. Correlate with the kinds of plants found in them.
3. Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organism.
4. Prepare a temporary mount of onion root tip to study mitosis.
5. Study the effect of different temperatures and three different pH on the activity of salivary amylase on starch.
6. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

B. Study/observation of the following (Spotting)

1. Flowers adapted to pollination by different agencies (wind, insects, birds).
2. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).
3. Meiosis in onion bud cell or grasshopper testis through permanent slides.
4. T.S. of blastula through permanent slides (Mammalian).
5. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colourblindness.
6. Common disease causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides or specimens. Comment on symptoms of diseases that they cause.
7. Two plants and two animals (models/virtual images) found in xeric conditions. Comment upon their morphological adaptations.
8. Two plants and two animals (models/virtual images) found in aquatic conditions. Comment upon their morphological adaptations.

PRACTICAL EXAMINATION

Time – 3 hour

Marks – 30

External Examiner

- | | |
|---------------------------------------|------------------|
| 1. Slide Preparation | 5 marks |
| 2. Spotting | 6 marks |
| 3. Sessional work submission and oral | 2+2 = 4 marks |
| | Total = 15 marks |

Internal Examiner

- | | |
|--|------------------------|
| 1. One long experiment (ex. no. 1,4,5,6) | 5 marks |
| 2. One short experiment(ex.no. 2,3,4) | 4 marks |
| 3. Project work + oral | 4+2 = 6 marks |
| | Total = 15 marks |
| | Grand Total = 30 marks |

NOTE – Students will be evaluated in a combined manner by the external and internal examiners. Practice workbook and project work will be compulsory to present at the time of UP Board practical examinations.

Practical Examination for Private Students

50 % marks will be provided by their related subject teacher / Principal as internal examiner, remaining 50 % will be given by external examiner.

HISTORY

CLASS 12

As the regular teaching-learning in schools, during the session 2020-21, has widely been affected due to the COVID-19 pandemic, the subject experts committee, after due consideration, has recommended to reduce the syllabus by 30% in the following manner:-

PART II

5. Medieval Society through Travellers' Accounts

Broad overview:

Outline of social and cultural life as they appear in travellers' accounts.

Story of their writings: A discussion of where they travelled, why they travelled, what they wrote, and for whom they wrote.

Excerpts: from Al-Biruni, Ibn Battuta, Francois Bernier

Discussion: What these travel accounts can tell us and how they have been interpreted by historians.

8. Agrarian Relations : The Ain-i-Akbari

Broad overview :

- a. Structure of agrarian relations in the 16th and 17th centuries. Patterns of change over the period.

Story of discovery : Account of the compilation and translation of Ain-i-Akbari.

Excerpt : from the Ain-i-Akbari

Discussion : Ways in which historians have used the text to reconstruct history.

PART III

12. Colonialism and Indian Towns:

Town Plans and Municipal Reports

Broad overview : History of towns in India, colonization and cities, hill stations, town planning of Madras, Calcutta and Bombay.

Excerpts : Photographs and paintings, plans of cities. Extract from town plan reports.

Focus on Calcutta town planning.

Discussion : How the above sources can be used to reconstruct the history of towns. What these sources do not reveal.

14. Partition through Oral Sources

Broad over view:

- a. The history of the 1940s
- b. Nationalism , Communalism and partition.

Focus : Punjab and Bengal.

Excerpts: Oral testimonies of those who experienced partition.

Discussion : Ways in which these have been analyzed to reconstruct the history of the event.

In accordance with the above, the remaining 70 percent of the total syllabus is as follows:

PART I**30 marks****1. The story of the first cities : Harappan Archaeology.**

Broad overview : Early urban centres.

Story of discovery : Harappan civilization

Excerpt : Archaeological report on a major site.

Discussion : How it has been utilized by archaeologists/historians.

2. Political and Economic History : How Inscriptions tell a story.

Broad overview : Political and Economic history from the Mauryan to the Gupta period.

Story of discovery : Inscriptions and the decipherment of the script. Shifts in the understanding of political and economic history.

Excerpt : Asokan inscription and Gupta period land grant.

Discussion : Interpretation of inscriptions by historians.

3. Social Histories : Using the Mahabharata

Broad overview : Issues in social history, including caste, class, kinship and gender.

Story of discovery : Transmission and publications of the Mahabharata.

Excerpt : From the Mahabharata, illustrating how it has been used by historians.

Discussion : Other sources for reconstructing social history.

4. A History of Buddhism : Sanchi Stupa

Broad overview :

a. A brief review of religious histories of Vedic religion, Jainism, Vaishnavism, Shaivism (Puranic Hinduism).

b. Focus on Buddhism.

Story of discovery : Sanchi Stupa

Excerpt : Reproduction of sculptures from Sanchi.

Discussion : Ways in which sculpture has been interpreted by historians, other sources for reconstructing the history of Buddhism.

PART II**30 marks****6. Religious Histories : The Bhakti-Sufi Tradition**

Broad overview :

a. Outline of religious developments during this period.

b. Ideas and practices of the Bhakti-Sufi saints.

Story of transmission : How Bhakti-Sufi compositions have been preserved.

Excerpt : Extracts from selected Bhakti-Sufi works.

Discussion : Ways in which these have been interrupted by historians.

7. New Architecture : Hampi

Broad overview :

a. Outline of new buildings during Vijaynagar period-temples, forts, irrigation facilities.

b. Relationship between architecture and the political system.

Story of discovery : account of how Hampi was found.

Excerpt : Visuals of buildings at Hampi.

Discussion : Ways in which historians have analyzed and interpreted these structures.

9. The Mughal Court : Reconstructing histories through chronicles.

Broad overview :

- a. Outline of political history 15th – 17th centuries.
- b. Discussion of the Mughal court and politics.

Story of discovery : Account of the production of court chronicles and their subsequent translation and transmission.

Excerpts : From the Akbaranama and Padshahnama.

Discussion : Ways in which historians have used the texts to reconstruct political histories.

PART III

30 marks

10. Colonialism and Rural Society

Evidence from official reports

Broad overview :

- a. Life of zamindars, peasants and artisans in the late 18th century.
- b. East India Company, revenue settlements in various regions of India and surveys.
- c. Changes over the nineteenth century.

Story of official records : An account of why official investigations into rural societies were undertaken and the types of records and reports produced.

Excerpts : From fifth report, accounts of Frances Buchanan-Hamilton and Deccan Riots Report.

Discussion : What the official records tell and do not tell and how they have been used by historians.

11. Representations of 1857

Broad overview :

- a. The events of 1857-58
- b. Vision of Unity
- c. How these events were recorded and narrated.

Focus : Lucknow

Excerpts : Pictures of 1857. Extracts from contemporary accounts.

Discussion : How the pictures of 1857 shaped British opinion of what had happened.

13. Mahatma Gandhi through contemporary eyes

Broad overview:

- a. The Nationalist Movement 1918-48
- b. The nature of Gandhian politics and leadership.

Focus : Mahatma Gandhi and the three movements and his last days as ‘finest hours’.

Excerpts : reports from English and Indian language newspapers and other contemporary writings.

Discussion : How newspapers can be a source of history.

15. The Making of the Constitution

Broad overview :

- a. Independence and the new Nation State.
- b. The making of the Constitution.

Focus : The Constitutional Assembly debates.

Excerpts : From the debates.

Discussion : What such debates reveal and how they can be analyzed.

16. Map Work : from existing units – 10 marks

05 questions for 2 marks each. 01 mark for the correct answer and 01 mark for pointing correct location on map. For visually impaired candidates, in place of map work, 05 questions should be given for 02 marks each.

There will be a single question paper of 100 marks. Minimum marks required : 33

Type of question	No. of questions	Marks	Total
Multiple choice questions	10	01	10
Very short answer questions	05	02	10
Short answer questions	06	05	30
Long answer questions	03	10	30
Map	05	02	10
Historical events	10	01	10
	No. of questions - 39		Total - 100

Knowledge based – 30%

Understanding based – 40%

Application based – 20%

Skill based – 10%

Easy – 30%

Average – 50%

Difficult – 20%

Geography

Class-XII (2020-21)

As the regular teaching-learning in schools, during the session 2020-21, has widely been affected due to the COVID-19 pandemic, the subject experts committee, after due consideration, has recommended to reduce the syllabus by 30% in the following manner:-

Part-A: Fundamentals of Human Geography

Unit-4: Transport, Communication and Trade

- Land transport - roads, railways; trans-continental railways.
- Water transport- inland waterways; major ocean routes.
- Air transport- Intercontinental air routes.
- Oil and gas pipelines.
- Satellite communication and cyber space- importance. and usage for geographical information; use of GPS.
- International trade- bases and changing patterns; ports as gateways of international trade; role of WTO in international trade.

Part-B: India: People and Economy

Unit-8: Resources and Development

- Land resources- general land use; agricultural land use; geographical conditions and distribution of major crops (Wheat, Rice, Tea, Coffee, Cotton, Jute, Sugarcane and Rubber); agricultural development and problems.
- Industries - types, factors of industrial location; distribution and changing pattern of selected industries iron and steel, cotton textiles, sugar, petrochemicals, and knowledge based industries; impact of liberalization, privatization and globalization on industrial location; industrial clusters.

Unit-9: Transport, Communication and International Trade

- Transport and communication-roads, railways, waterways and airways: oil and gas pipelines; Geographical information and communication networks.
- International trade- changing pattern of India's foreign trade; sea ports and their hinterland and airports.

Part-C: Practical Work

Unit-2: Field Study or Spatial Information Technology

- Field visit and study: map orientation, observation and preparation of sketch; survey on any one of the local concerns; pollution, ground water changes, land use and land-use changes, poverty, energy issues, soil degradation, impact of floods and drought, catchment area of school, Market survey and Household survey (any one topic of local concern may be taken up for the study; observation and questionnaire survey may be adopted for the data collection; collected data may be tabulated and analyzed with diagrams and maps). Students can be given different topics to get more insight into various problems of society.

OR

- Spatial Information Technology Introduction to GIS; hardware requirements and software modules; data formats; raster and vector data, data input, editing and topology building; data analysis; overlay and buffer.

Class-XII (2020-21)

<u>Part A</u>	<u>Fundamentals of Human Geography</u>	<u>35 Marks</u>
	<u>Unit-1: Human Geography</u>	<u>30</u>
	<u>Unit-2: People</u>	
	<u>Unit-3: Human Activities</u>	
	<u>Unit-5: Human settlements</u>	
	<u>Map Work</u>	<u>5</u>
<u>Part B</u>	<u>India- People and Economy</u>	<u>35 Marks</u>
	<u>Unit-6: People</u>	<u>30</u>
	<u>Unit-7: Human Settlements</u>	
	<u>Unit-8: Resources and Development</u>	
	<u>Unit-10: Geographical Perspective on selected issues and problems</u>	
	<u>Map Work</u>	<u>5</u>

<u>Part C</u>	<u>Practical Work</u>	<u>30 Marks</u>
<u>External Examiner</u>	1- <u>Written exam based on unit 1-4</u> 2- <u>Viva-voce</u>	<u>10 Marks</u> <u>05 Marks</u>
	<u>Note- The practical note book, chart/model must be presented to the external examiner.</u>	
<u>Internal Examiner</u>	1- <u>Model/Chart</u> 2- <u>Practical note book and viva-voce</u>	<u>5 Marks</u> <u>05+05</u>

Part-A: Fundamental of Human Geography

Unit-1: Human Geography: Nature and Scope

Unit-2: People

- Population-distribution, density and growth
- Population change-spatial patterns and structure; determinants of population change.
- Population Composition - age-sex ratio; rural-urban composition.
- Human development - concept; selected indicators, international comparisons.

Unit-3: Human Activities

- Primary activities - concept and changing trends; gathering, pastoral, mining, subsistence agriculture, modern agriculture; people engaged in

agricultural and allied activities - some examples from selected countries.

- Secondary activities-concept; manufacturing: types - household, small scale, large scale; agro based and mineral based industries; people engaged in secondary activities - some examples from selected countries.
- Tertiary activities-concept; trade, transport and tourism; services; people engaged in tertiary activities – some examples from selected countries.
- Quaternary activities-concept; people engaged in quaternary activities - case study from selected countries.

Unit-5: Human Settlements

- Settlement types - rural and urban; morphology of cities (case study); distribution of mega cities; problems of human settlements in developing countries.

Map Work on identification of features based on 1,2,3&5 units on the outline/Physical/Political map of world.

Part-B: India: People and Economy

Unit-6: People

- Population: distribution, density and growth; composition of population - linguistic, religious; sex, rural-urban and occupational-regional variations in growth of population.
- Migration: international, national-causes and consequences.
- Human development: selected indicators and regional patterns.
- Population, environment and development.

Unit-7: Human Settlements

- Rural settlements - types and distribution.
- Urban settlements - types, distribution and functional classification.

Unit-8: Resources and Development

- Water resources-availability and utilization-irrigation, domestic, industrial and other uses; scarcity of water and conservation methods-rain water harvesting and watershed management.
- Mineral and energy resources- distribution of metallic (Iron ore, Copper, Bauxite, Manganese); non-metallic (Mica, Salt) minerals; conventional (Coal, Petroleum, Natural gas and Hydroelectricity) and non-conventional energy sources (solar, wind, biogas) and conservation.

- Planning in India- target group area planning (case study); idea of sustainable development (case study).

Unit-10: Geographical Perspective on selected issues and problems

- Environmental pollution; urban-waste disposal.
- Urbanization, rural-urban migration; problems of slums.
- Land degradation.

Map work on locating and labelling of features based on above units on outline map of India.

Part-C: Practical Work

Unit-1: Processing of Data and Thematic Mapping

- Type and Sources of data: Primary, Secondary and other sources.
- Tabulating and processing of data; calculation of averages, measures of central tendency.
- Representation of data- construction of diagrams: bars, circles and flowchart; thematic maps; construction of dot; choropleth and isopleths maps.
- Data analysis and generation of diagrams, graphs and other visual diagrams using computers.

<u>Types of Questions</u>	<u>Total no. Of Questions</u>	<u>Mark of Questions</u>	<u>Total Marks</u>
<u>Multiple choice type</u>	<u>08</u>	<u>01</u>	<u>08</u>
<u>Very short answer type</u>	<u>08</u>	<u>02</u>	<u>16</u>
<u>Short answer type</u>	<u>06</u>	<u>04</u>	<u>24</u>
<u>Long answer type</u>	<u>02</u>	<u>06</u>	<u>12</u>
<u>Map</u>	<u>02</u>	<u>05</u>	<u>10</u>
<u>05 Marks- In Indian context-</u> <u>05 Marks- In World context-</u>			
	<u>Total-</u>		<u>70</u>

Practical-30

Theory-70

Practical-30

Total-100

Class : 12

Subject : Civics

As the regular teaching – learning in schools, during the session 2020-21, has widely been affected due to the Covid – 19 pandemic, the subject experts committee, after due consideration, has recommended to reduce the syllabus by 30% in the following manner :

Approximately 30% reduced syllabus :-

Part : A Contemporary World Politics

Unit II 1- US Hegemony in World Politics

Growth of unilateralism : Afghanistan, first Gulf War, response to 9/11 and attack on Iraq. Dominance and challenge to the US in economy and Ideology. India's renegotiation of its relationship with USA.

Unit III 2- Security in Contemporary World

Traditional concerns of security and politics of disarmament. Non-traditional or human security : global poverty, health and education. Issues of human rights and migration.

Unit IV 2- Globalization

Economic, cultural and political manifestations. Debates on the nature of consequences of globalization. Anti-globalization movements. India as an arena of globalization and struggle against it.

Part : B Politics in India since Independence

Unit V 2- Era of One-Party Dominance

First three general elections, nature of congress dominance at the national level, uneven dominance at the state level. Coalition nature of Congress. Major opposition parties.

Unit VI 2- Challenges to the Congress System

Political succession after Nehru. Non-Congressism and electoral upset of 1967, Congress split and reconstitution, Congress victory in 1971 elections, politics of 'Garibi' hatao.

Subject : Civics
Class – 12 (2020-21)

(Revised syllabus- Approximately 70%)

Total marks : 100

Only Paper

Time : 3 hrs.

A. Weightage of the content

Part : A Contemporary World Politics		Marks : 50
Unit I	1- Cold War Era 2- The End of bipolarity	14
Unit II	1- Alternative centres of Power 2- Contemporary South Asia	16
Unit III	1- International Organizations	10
Unit IV	1 – Environment and Natural Resources	10
Part : B Politics in India since Independence		Marks : 50
Unit V	1- Challenges of Nation Building 3- Politics of planned Development	16
Unit VI	1 – India's external relations 2 – Crisis of Democratic order	18
Unit VII	1 – Rise of popular Movements 2 – Regional aspirations 3- Recent Developments in Indian Politics.	16
Grand Total		100

Class : 12 Civics**1- Types of Questions :**

Sr.	Types of Questions	No. of Ques.	Marks	Total Marks
1-	Objective Questions	10	01	10
2-	Very Short Questions	10	02	20
3-	Short Questions – 1	06	05	30
4-	Short Questions – 2	04	06	24
5-	Long Questions	02	08	16
			Total	100

2- Forms of Questions :

Sr.	Forms of Questions	Marks	Percentage
1-	Knowledge	40	40%
2-	Understanding	40	40%
3-	Application	20	20%

Total : 100

100%

3- Difficulty Level of questions :

Sr.	Difficulty Level of questions	Marks	Percentage
1-	Easy	30	30%
2-	Average	50	50%
3-	Difficult	20	20%

Total: 100

100%

Course Content

Part : A Contemporary World Politics **50 Marks**

Unit -I **14 Marks**

1 – Cold War Era :

Emergence of two power blocs after the second world war. Arenas of the cold war. Challenges to the Bipolarity: Non Aligned Movement, quest for new International economic order. India and the cold war.

2 – The End of Bipolarity :

New entities in the world politics : Russia, Balkan states and central Asian States. Introduction of democratic politics and capitalism in post communist regimes, India's relations with Russia and other post-communist countries.

Unit – II **16 Marks**

2 – Alternative Centres of Power :

Rise of China as an economic power in post –Mao era, creation and expansion of European Union, ASEAN. India's changing relations with China.

2- Contemporary South Asia in the Post Cold War era :

Democratisation in Pakistan and Nepal. Ethnic conflict in Sri Lanka. Impact of economic globalization on the region. Conflicts and efforts for peace in South Asia India's relation with its neighbours.

Unit - III **10 Marks**

1 – International Organizations :

Restructuring and the future of the UN. India's position in the restructured UN. Rise of New International actors : new international economic organizations, NGO's. How Democratic and accountable are the new institutions of global governance ?

Unit – IV **10 Marks**

1 – Environment and Natural Resources :

Environment movement and evolution of global environmental norms. Conflicts over traditional and common property resources. Rights of Indegenous people India's stand in global environmental debates.

Part : B Politics in India since Independence 50 Marks

Unit - V 16 Marks

1 – Challenges of Nation Building :

Nehru's approach to nation-building ; Legacy of partition : Challenge of 'Refugee' resettlement, the Kashmir problem Organization and reorganization of states ; Political conflicts over language.

2-Politics of Planned Development :

Five year plans, expansion of state sector and the rise of new economic Interests. Famine and suspension of five year plans, Green Revolution and its political fallouts.

Unit –VI 18 Marks

1 – India's External Relations :

Nehru's foreign policy Sino – Indian war of 1962, Indo – Pak war of 1965 and 1971. India's nuclear programme. Shifting alliance in world politics.

2- Crisis of the Democratic Order :

Navnirmaan movement in Gujrat and the Bihar movement, Emergency : Context, constitutional and extra-Constitutional dimensions, resistance to emergency. 1977 elections and the formation of Janta Party. Rise of Civil liberties organizations.

Unit –VII 16 Marks

1 – Popular Movements in India :

Farmer's movements, Women's movement, Environment and Development – affected people's movements.

3- Regional Aspirations :

Rise of regional parties. Punjab crisis and the anti-Sikh riots of 1984. The Kashmir situation. Challenges and responses in the North East.

3- Recent Developments in Indian Politics :

Participatory upsurge in 1990s. Rise of the JD and the BJP. Increasing role of regional parties and coalition politics. Coalition governments :

NDA (1998-2004)

UPA (2004-2014)

Implementation of Mandal Commission report. Communalism, secularism and Democracy.

ECONOMICS

CLASS 12

As the regular teaching-learning in schools, during the session 2020-21, has widely been affected due to the COVID-19 pandemic, the subject experts committee, after due consideration, has recommended to reduce the syllabus by 30% in the following manner:-

PART A : MICROECONOMICS

Unit 1 : Introduction

Introduction, concept of production possibility frontier.

Unit 2 : Producer behavior and supply

Producer equilibrium – meaning and its conditions in term of marginal revenue – marginal cost.

Unit 3 : Forms of market and price determination under perfect competition with simple applications.

Other market forms monopoly, monopolistic competition, their meaning and features.

PART B : MACROECONOMICS

Unit 6 : Money and banking

Control of credit through bank rates, CRR, SLR, repo rate and reverse repo rate, open market, operation margin requirement.

Unit 9 : Balance of payments

Balance of payments deficit meaning, determination of exchange rate in a free market.

In accordance with the above, the remaining 70 percent of the total syllabus is as follows:

Part A : Introductory Microeconomics

Unit 1 : Introduction

Meaning of Microeconomics and macroeconomics, positive and normative economics.

What is an economy? Central problems of an economy - what, how and for whom to produce. Opportunity cost.

Unit 2 : Consumer's Equilibrium and Demand

Consumer's equilibrium meaning of utility, marginal utility, law of diminishing, marginal utility, conditions of consumer's equilibrium using marginal utility analysis.

Indifference curve analysis of consumer's equilibrium-the consumer's budget (budget set and budget line), preferences of the consumer (indifference curve, indifference map) and conditions of consumer's equilibrium.

Demand, market demand, determinants of demand, demand schedule, demand curve and its slope, movement along and shifts in the demand curve; price elasticity of demand - factors affecting price elasticity of demand; measurement of price elasticity of demand – percentage-change method.

Unit 3 : Producer Behaviour and Supply

Meaning of Production Function – Short-Run and Long-Run

Total Product, Average Product and Marginal Product.

Returns to a Factor

Cost: Short run costs - total cost, total fixed cost, total variable cost; Average cost;

Average fixed cost, average variable cost and marginal cost-meaning and their relationships.

Revenue - total, average and marginal revenue - meaning and their relationship.

Producer's equilibrium-meaning and its conditions in terms of marginal revenue-marginal cost. Supply, market supply, determinants of supply, supply schedule, supply curve and its slope, movements along and shifts in supply curve, price elasticity of supply; measurement of price elasticity of supply - percentage-change method.

Unit 4 : Forms of Market and Price Determination under Perfect Competition with simple applications.

Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply.

Other Market Forms - monopoly, monopolistic competition, oligopoly - their meaning and features.

Simple Applications of Demand and Supply: Price ceiling, price floor.

Part B : Introductory Macroeconomics

Unit 5 - National Income and Related Aggregates

What is Macroeconomics?

Basic concepts in macroeconomics: consumption goods, capital goods, final goods, intermediate goods; stocks and flows; gross investment and depreciation.

Circular flow of income (two sector model); Methods of calculating National Income - Value Added or Product method, Expenditure method, Income method.

Aggregates related to National Income:

Gross National Product (GNP), Net National Product (NNP), Gross and Net Domestic

Product (GDP and NDP) - at market price, at factor cost; Real and Nominal GDP.

GDP and Welfare

Unit 6 - Money and Banking

Money - meaning and supply of money - Currency held by the public and net demand deposits held by commercial banks.

Money creation by the commercial banking system.

Central bank and its functions (example of the Reserve Bank of India): Bank of issue, Govt. Bank, Banker's Bank, Control of Credit through Bank Rate, CRR, SLR, Repo Rate and Reverse Repo Rate, Open Market Operations, Margin requirement.

Unit 7 - Determination of Income and Employment

Aggregate demand and its components.

Propensity to consume and propensity to save (average and marginal). Short-run equilibrium output; investment multiplier and its mechanism. Meaning of full employment and involuntary unemployment.

Problems of excess demand and deficient demand; measures to correct them - changes in government spending, taxes and money supply.

Unit 8 - Government Budget and the Economy

Government budget - meaning, objectives and components.

Classification of receipts - revenue receipts and capital receipts; classification of expenditure - revenue expenditure and capital expenditure.

Unit 9 - Balance of Payments

Balance of payments account - meaning and components; balance of payments deficit-meaning.

Foreign exchange rate - meaning of fixed and flexible rates and managed floating. Determination of exchange rate in a free market.

SOCIOLOGY

CLASS 12

As the regular teaching-learning in schools, during the session 2020-21, has widely been affected due to the COVID-19 pandemic, the subject experts committee, after due consideration, has recommended to reduce the syllabus by 30% in the following manner:-

PART A : INDIAN SOCIETY

Unit 4 : Market as a Social Institution

1. Sociological perspectives on market and the economy.
2. Globalization interlinking of local, regional, national and International market.

PART B : CHANGE AND DEVELOPMENT IN INDIA

Unit 8 : Structural Change

Colonialism, Industrialization, Urbanization

Unit 13 : Globalization and Social Change

1. Dimensions of globalization.

Unit 14 : Mass Media and Communication

1. Types of mass media, radio, television and print media.
2. Changing nature of mass media.

There will be a single question paper of 100 marks and 3 hours duration.

In accordance with the above, the remaining 70 percent of the total syllabus is as follows:

PART A : INDIAN SOCIETY

Unit 1 : Introducing Indian Society **04**
marks

Colonialism, Nationalism, Class and Community.

Unit 2 : The Demographic Structure of the Indian Society **08**
marks

Theories and concepts in demography, rural urban linkages and division.

Unit 3 : Social Institutions, Continuity and Changes **10**
marks

The caste system, tribal community, family and kinship.

Unit 5 : Patterns of Social Inequality & Exclusion **10 marks**

Caste prejudice, schedule caste & other backward classes, marginalization of tribal communities, the struggle women's equality, the struggle of the differently abled.

Unit 6 : The Challenges of Cultural diversity **10**
marks

Cultural communities and the Nation state, problems of communalism, regionalism and casteism, the Nation state, religion related issues and identities, communalism, secularism & nation state, state and civil society.

Unit 7 : Suggestion for Project Work **08**
marks

Survey system, interview, a combination of observation & contemporary methods, potential cases and topics for a small research project.

PART B : CHANGE AND DEVELOPMENT IN INDIA

Unit 9 : Cultural Change **10**
marks

Modernization, westernization, sanskritisation, secularization, social reform movements and laws.

Unit 10 : The Story of Indian Democracy **07**
marks

The constitution as an instrument of social change, panchayati raj and the challenges of social transformation, parties; Pressure groups and democratic politics.

Unit 11 : Change & Development in Rural Society **11**
marks

Land reforms, green revolution & emerging agrarian society, Agrarian structure :caste and class in rural India, land reforms, green revolution & its social consequences, transformation in rural society, globalization, liberalization& rural society.

Unit 12 : Change and Development in Industrial Society **10**
marks

From planned industrialization to liberalization, work process, working state, strike and trade union.

Unit 15 : Social Movement **12**
marks

Theories & classification of social movements, class based movements, dalit movement, backward castes, trends in upper caste responses, women's movements in Independent India, tribal movements, environmental movements.