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Class 10 Academic Program 2026

(Online/Combo Batch)

Pioneer Batch

Syllabus [Full Course]

SL No.	Subject	Chapter	Lecture
1	**Physics**	9,10,11,12,13	**26**
2	**Chemistry**	8,9,10,11,12	**30**
3	**Math**	3.3-3.5,8.2-8.5,10,11.2,12,13,14,15,16.3-16.4,17	**46**
4	**H.Math**	5.4-5.7,6.1-6.3,7,8.2-8.3,9.2,10,11.3-11.4,12,13,14	**44**
5	**Biology**	9,10,11,12,13,14	**28**
6	**ICT**	5,6	**14**
			Total: 188

Physics		
Chapter	**Lecture**	**Content**
Chapter-09 Refraction of Light	**P-01**	Refraction of Light., Laws of refraction
	P-02	Relative refraction index, Mathematical Problem
	P-03	Total internal reflection, Rainbow, Mirage, Mathematical Problem
	P-04	Uses of refraction, Optical fiber, Prism, Periscope and binocular, Lens, Types of lenses
	P-05	Magnification, Concave lens, Power of a lens
	P-06	Convex lens, Mathematical Problem
Chpater-10 Static Electricity	**P-07**	Charge, Static electricity due to friction
	P-08	Electrical Induction, Electroscope
	P-09	Electric Force
	P-10	Electric Field
	P-11	Electric potential, Potential difference, Capacitor
	P-12	Uses of static electricity, Photocopy, Van de Graaff Machine, Fuel Truck, Electronics, Lightning and Lightning Arrestor, Static electricity color spray
Chapter-11 Current Electricity	**P-13**	Electric current, Electromotive force and potential difference, Conductor, Insulator and Semiconductor, Direction of Current flow
	P-14	Relationship between potential difference and electricity, Ohm's Law, Resistance
	P-15	Circuit analysis
	P-16	Equivalent resistance: Series connection, Equivalent resistance: Parallel connection
	P-17	Equivalent resistance: Mathematical Problem [1st Part]
	P-18	Equivalent resistance: Mathematical Problem [2nd Paret], Electric Power
	P-19	Electrical Supply, Electric system loss, Load Shedding, Safe use of electricity, Household electric circuit diagram, Question Solve
	P-20	Mathematical Problem
Chapter-12 Magnetic Effects of Current	**P-21**	Magnet, Magnetic effects of current, Solenoid, Electromagnet
	P-22	Effect of a magnet on a current carrying wire, DC Motor
	P-23	Electromagnetic Induction, Generator, Transformer
	P-24	Mathematical Problem

Chapter-13 Radioactivity and Electronics	**P-25**	Radioactivity, Alpha Ray, Beta Ray, Gamma Ray, Half Life, Uses of Radioactivity, Cautions about Radioactivity
	P-26	Development of electronics, Vacuum tube, Transistor, Integrated circuit, Future electronics, Analog & Digital electronics, Semiconductor

Chemistry		
Chapter	**Lecture**	**Content**
Chapter-08 Chemistry and Energy	**C-01**	Source of Chemical Energy, Classification of Chemical Reactions According to Change of Heat (Exothermic Reactions, Endothermic Reactions), Calculation of Heat Change in Chemical Reactions Using the Bond Energy
	C-02	Calculation of Heat Change in Chemical Reactions mathematical Problem, Transformation of chemical energy into different types of energy, Chemical Energy and Use of Various Energies Obtained from Chemical Energy
	C-03	Appropriate Use of Chemical Energy, Importance of Purity of Fuel, Negative Effects of the Use of Chemical Energy, Uses of Ethanol as Fuel
	C-04	Electrochemical cell, Conductor, Electronic Conductor, Electrolyte, Electrode, Electrolytic Cell, Electrolysis, Use of Electrolysis
	C-05	The Mechanism of Electrolysis
	C-06	Production of Electricity by Chemical Reaction, Nuclear Reactions and generation of Electricity
Chapter-09 Acid-Base Balance	**C-07**	Acid, Demonstrating properties of dilute acids through experiments, The role of water in chemical properties of acids, Alkali & Base, Properties of dilute bases
	C-08	Dilute base in reaction with metallic salts, The role of water in chemical properties of Alkali, Corrosive properties of concentrated acids and alkali
	C-09	Revision, the conception of pH, Measuring pH, Importance of pH, Neutralization Reaction (Importance of Neutralization Reaction in daily life, Salt), Acid rain
	C-10	Hardness of water, Water pollution & pollution control, Testing the purity of water and water purification, BOD, COD, Concept of Molarity
Chapter-10 Mineral Resources: Metal-Nonmetal	**C-11**	Mineral resources, Rocks, Minerals & Ores, Metal Extraction (Crushing the ores, Condensation of ores)
	C-12	Metal Extraction (Conversion of condensed ore to oxides, Conversion of Metallic oxides to free metals),Purification of metals, Selected alloys
	C-13	Symptoms, causes and prevention of corrosion of certain metals and alloys, Prevention of Metal corrosion, recycling of metals
	C-14	Nonmetal minerals (Sulphur, Use of sulphur, Sulphur di oxide, Sulphuric acid, Preparation of Sulphuric acid by contact method
Chapter-11 Mineral Resources: Fossils	**C-15**	Fossil Fuel, Natural gas, Constituents of petroleum & their separation, Hydrocarbon (Aliphatic Hydrocarbon) Availability of organic compounds
	C-16	Functional group & Homologous series
	C-17	Aromatic Hydrocarbon, Saturated Hydrocarbons (Alkane)
	C-18	Preparation of Alkane & Characteristic Reactions
	C-19	Unsaturated Hydrocarbons: Alkene & Alkyne
	C-20	Preparation of alkene & alkyne, Characteristic reactions
	C-21	Alcohol, Aldehyde, preparation of fatty acid, Chemical Properties of fatty acid
	C-22	Alcohol, aldehyde, Characteristic reactions of fatty acid
	C-23	Preparation of alcohol, aldehyde & fatty acid from hydrocarbon
	C-24	Uses of alcohol, aldehyde & fatty acid, polymer, conversion, important reactions

Chapter-12 Chemistry in Our Lives	**C-25**	Domestic Chemistry (Edible salt, Baking powder, Vinegar, Soft drinks)
	C-26	Chemistry for Cleanliness (Washing soda, Toilet Cleaner)
	C-27	Soap, Detergent and it's working mechanism, Bleaching powder
	C-28	Important reactions and working mechanisms (Revision)
	C-29	Laboratory production of ammonia gas & Industrial production ammonia gas, Chemistry in agriculture & industry
	C-30	Preservative, Glass Cleaner, Toilet Cleaner

Biology		
Chapter	**Lecture**	**Content**
Chapter-9 Firmness and Locomotion	**B-01**	Introduction of human skeleton, Role of skeleton in firmness and locomotion
	B-02	Bone, Cartilage and Joint, Synovial Joint
	B-03	Muscles, Role of bones and muscles in human locomotion, Tendon and ligament
	B-04	Diseases of Bones (Osteoporosis, Rheumatoid Arthritis), [Chapter review]
Chapter-10 Co-ordination	**B-05**	Coordination in Plants (Phytohormone, Auxin, Gibberellin, Cytokinin, ethylene), Uses of hormones (Growth, Movement, Phototrophic movement or phototropism)
	B-06	Co-ordination in animals (Influence of Hormones, Influence of nerves), Nervous system, Central Nervous System (Brain, Spinal cord)
	B-07	Nervous tissue, Reflex action
	B-08	Peripheral Nervous System, Autonomic nervous system, Transmission of Impulse
	B-09	Hormone, Introduction of main endocrine gland, functions, and secreted hormones, Abnormalities due to Hormone (Thyroid problem)
	B-10	Abnormalities due to Hormone (Diabetes, Stroke, Physical disabilities due to nerve disoder (Paralysis, Epilepsy, Parkinson's disease), Influence of tobacco and drugs on co-ordination
Chapter-11 Reproduction	**B-11**	Concept of reproduction in organism and its significance, Plant Reproduction (Reproductive organ: Flower, Different parts of a flower)
	B-12	Inflorescence, pollination, Medium of pollination
	B-13	Origin of the male gametophyte, Origin of the female gametophyte
	B-14	Fertilization, Development of new sporophyte, Origin of fruits
	B-15	Animal Reproduction, (Fertilization, The basic significance of fertilization, Role of hormone in human reproduction
	B-16	Development of the embryo, Placenta, Fetal membrane, Reproduction Related diseases (AIDS))
Chapter-12 Heredity in Organisms and Biological Evolution	**B-17**	Heredity in organism, Components carrying (heredity materials) behavioural features to the offspring from generation to generation, Chromosome, DNA
	B-18	RNA, Gene, DNA replication
	B-19	DNA Test, Determination of human sex
	B-20	Genetic disorder (Color blind or color blindness, Thalassemia)
	B-21	Theories of biological evolution, Origin of life, Theory of Darwin or Darwinism (According to Darwin, general facts about natural events)
	B-22	Non-Darwinian evolution, Evidence of biological evolution, Application of the principles of biological evolution

Chapter-13 Environment of life	**B-23**	Ecosystem, Components of an ecosystem, Ecosystem of a pond
	B-24	Food Chain (Predator Food Chain, Parasitic Food Chain, Saprophytic food chain), Food web, Nutrition flow in ecosystem, Energy flow in the ecosystem
	B-25	Relation of energy between trophic levels, Concept of energy pyramid, Effects of energy pyramid to keep food chain in limit, Biodiversity, Types of biodiversity, Effect of biodiversity on the maintenance of stability in an ecosystem
	B-26	Interaction and interdependence among different organisms and the balance of environment, Positive interaction, Commensalisms, Negative interaction, Significance and method of conserving environment
Chapter-14 Biotechnology	**B-27**	Biotechnology, Steps of tissue culture, Use of tissue culture
	B-28	Genetic engineering, Stages of the Preparation of GMO or DNA recombinant, Genetic engineering in use

Mathematics		
Chapter	**Lecture**	**Content**
Chapter-03 Algebraic Expressions	**M-01**	Lowest form of friction, Fractions with a common denominator, Resolving into factors, Techniques for determining factors, work, Exercise-3.3 (1-25)
	M-02	Exercise -3.3 (26-31), concept of remainder theorem, concept of factorization theorem, example, Work, Addition, Subtraction and equations of algebraic fraction
	M-03	Exercise-3.4 (1-16)
	M-04	Forming and applying algebraic formulae in solving real life problems (Related to Payable or Attainable, , time and work, time and distance, Related to pipe and water tank, Related to profit and loss), Exercise–3.5 (14-25)
	M-05	Formulation of Algebraic Formulas (Investment-Profit), Exercise-3.5 (26-38)
	M-06	Chapter-03 (3.3-3.5) [Re-discussion]
Chapter-08 Circle	**M-07**	Corollary-4,5, Exercise-8.2
	M-08	Theorem related to quadrilateral inscribed in a circle (23, 24), Corollary -6,7, Exercise-8.3 (1,2)
	M-09	Exercise-8.3 (3-7)
	M-10	Secants of Circle, Tangents, Common Tangents, Theorems (25, 26, 27), Corollary-8,9,10
	M-11	Exercise–8.4(1-6)
	M-12	Constructions related to Circle (6-8), Exercise–8.5 (1-11)
	M-13	Constructions related to Circle (9-11), Exercise-8.5 (12-14)
	M-14	Exercise-8.5 (15-19)
Chapter-10 Distance and Elevation	**M-15**	Angle of elevation and angle of declination, Example-(1-4), Work, Exercise-10 (1-13)
	M-16	Example-(5,6), Exercise-10 (14-21), Work
Chapter-11 Algebraic Ratio and Proportion	**M-17**	Continued Proportions, Ratio, Work, Exercise (12,13), Exercise-11.2 (1-16)
	M-18	Work, Exercise (14,15), Exercise-11.2 (17-25)
Chapter-12 Simple Simultaneous Equations in Two Variables	**M-19**	Simple simaltaneous equations, Compatibility for the solutions of simple simaltaneous equations in two variables, Example-1, Exercise-12.1 (1-10)
	M-20	Solving Simple Simultaneous Equations (Substitution Method, Elimination Method), Example-2,3, Exercise-12.2 (1-6)
	M-21	Solving Simple Simultaneous Equations (Cross Multiplication Method), Example-(5-7), Exercise-12.2 (7-15)
	M-22	Graphical Method, Example-(8-11), Exercise-12.3 (1-10)
	M-23	Formation of simaltaneous equations from real life problems and solution, Example-(12,13), Exercise-12.4 (1-14)
	M-24	Example-(14,15), Exercise-12.4 (15-24)

Chapter-13 Finite series	**M-25**	Sequences, Series, Arithmetic series, Determination of general term of arithmetic series, Sum of n terms of arithmetic series, Example- (1-5), Exercise-13.1 (1-12)
	M-26	Example-6, Exercise-13.1(13-24)
	M-27	Finding the sum of the squares and cubes of the first n natural numbers, Exercise-13.2 (18-21), Work, Example-(7-9), Geometric series, Common terms, Example, Exercise-13.2 (1-5, 7, 8-11)
	M-28	Determining sums of terms in geometric series, Example-(10-12) , Exercise-13.2 (6, 12-17, 22-25)
Chapter-14 Ratio, Similarity and Symmetry	**M-29**	Properties of Ratios and Proportions, Geometric Proportions, Theorems: 28, 29, 30
	M-30	Theorems: 31, Exercise-14.1 (1-5)
	M-31	Exercise-14.1 (6-9), Congruence (Equiangular Polygons, Similar Polygons), Theorem: (32-34)
	M-32	Exercise-14.2 (1-10), Theorem: 35
	M-33	Concept of Division of Line Segments in Fixed Ratio, Construction-12 , Exercise-14.2 (11-13)
	M-34	Symmetry, Lines of Symmetry of Regular Polygons, Rotational Symmetry and Line Symmetry, Exercise-14.3
Chapter-15 Area Related Theorem and Construction	**M-35**	Area of a Plane, Theorem-36, 37, 38, Exercise-15 (1-7)
	M-36	Exercise-15 (8-12) , Theorem-39 (Pythagorean Theorem)
	M-37	Construction: 13, 14, 15
	M-38	Exercise-15 (13-18)
Chapter-16 Mensuration	**M-39**	Circumference of a circle, length of arc segment, area of a circle, Example-(18-20,22,26,27), Exercise- 16.3 (1-4)
	M-40	Example-(21,23-27), Exercise-16.3 (5-10), Rectangular Solids, Cubes, Example-(28,29)
	M-41	Example-(30-32), Exercise-16.4 (1-13)
	M-42	Cylinder, Example-33, Exercise-16.4 (14-21)
Chapter-17 Statistics	**M-43**	Cumulative frequency, frequency distribution table, Histogram, Mass Polygons
	M-44	Ogive curve, Determination of mean, Determination of weighted mean
	M-45	Determination of arithmatic mean in short cut method, Concept of median
	M-46	Concept of mode, Board CQ Question

Higher Mathematics		
Chapter	**Lecture**	**Content**
Chapter-05 Equation	**HM-01**	(System of quadratic equations with two variables, Example), Exercise-5.4
	HM-02	(Application of quadratic equations, Example), Exercise-5.5
	HM-03	(System of indicial equations with two variables, Example), Exercise-5.6
	HM-04	Solving quadratic equations using graphs, Exercise-5.7
Chapter-06 Inequality	**HM-05**	Concepts of inequalities, Examples, Exercise-6.1 (Complete), Uses of inequalities, Examples of Exercise-6.2
	HM-06	Exercise-6.2 (1-11)
	HM-07	Graph of inequalities, Exercise-6.3 (9-11)
	HM-08	Linear inequality with two variables, Example, Exercise 6.3 (12-17)
Chapter-07 Infinite Series	**HM-09**	Sequences, Infinitive series, Common terms, Examples, Exercise-7 (1-4, 6, 9, 10)
	HM-10	Proof of the formula of sum of infinite series, Exercise-7 (5, 7, 8, 11)
	HM-11	Exercise-7 (12, 13, 14)
	HM-12	Exercise-7 (15, 16, 17)

Chapter-08 Trigonometry	**HM-13**	Trigonometric ratios, Signs of trigonometric ratios in different quadrants, Exercise-8.2 (1-5)
	HM-14	Exercise-8.2 (6-10), Example, Exercise-8.3 (10)
	HM-15	Exercise-8.2 (11, 12, 13)
	HM-16	Trigonometric ratios of different angles, Exercise-8.3 (8)
	HM-17	Exercise-8.3 (07, 09, 12)
	HM-18	Exercise-8.3 (11, 13-16)
Chapter-09 Exponential and Logarithmic Functions	**HM-19**	Exercise-9.2 (a, b, c, d, e of 6 and 7)
	HM-20	Exercise-9.2 (f, g, h of 7), Examples (31, 33), Exercise-9.2 (10, 11)
	HM-21	Logarithmic and absolute value functions, Graph of functions, Exercise-9.2 (8, 9, 12)
	HM-22	Exercise-9.2 (13, 14, 15)
Chapter-10 Binomial Expansion	**HM-23**	Binomial expansion of $(1+y)^n$, Use of Pascal's Triangle, Example (1, 2, 3), Exercise- 10.1 (1, 2, 4, 5, 6)
	HM-24	Relation between ${}^{n}C_{r}$ and $n!$, Example (4), Exercise-10.1 (3), Binomial expansion of $(x+y)^n$
	HM-25	n! and finding the value of ${}^{n}C_{r}$, finding the (r+1)th term, Exercise-10.2 (10-14); HW: Example (10)
	HM-26	Exercise-10.2 (15-19)
Chapter-11 Coordinate Geometry	**HM-27**	Slopes (Details of +ve and -ve slopes), Exercise-11.3 (complete)
	HM-28	Equations of straight lines, graphs (graphs with different equations specially with +ve and -ve slopes), Exercise-11.4 (10-16)
	HM-29	Exercise-11.4 (17-24)
	HM-30	Slope, Area, Equation of Straight Line (Review)
Chapter-12 Planar Vector	**HM-31**	Equality of vectors, inverse vectors, addition and subtraction of vectors, rules of addition of vectors, scalar multiplication of vectors, distributive law for scalar multiplication of vectors, law of triangle and parallelogram, Examples-1, 2
	HM-32	(1-8, 10, 12) of Exercise-12, Example-4
	HM-33	Position vectors, Example-3, 5, Exercise-12(9, 11)
	HM-34	(13-16) of Exercise-12
Chapter-13 Solid Geometry	**HM-35**	Some basic definitions, solids, volume and surface area of rectangular solids, cube, Exercise-13 (7-9), HW: Exercise-13 (31)
	HM-36	Exercise-13 (10, 21-23), Right circular cone, Exercise-13 (11-13, 24) HW: Exercise-13 (32)
	HM-37	Sphere, Exercise-13 (14-20)
	HM-38	Prism, pyramid, example
	HM-39	Exercise-13 (25-28)
	HM-40	Rectangular Solids, Exercise-13 (1-6 and 29, 30)
Chapter-14 Probability	**HM-41**	Some concepts related to Probability, Logic Based Probability, Data based probability, Examples, Work, Exercise-14 (1-6)
	HM-42	Exercise-14(7-12), Sample space and probability determination of probability-by-probability Tree, Exercise-14 (13, 14)
	HM-43	Mutually exclusive events, mutually non-exclusive events, Concept of exclusive events (When to multiply / add), Exercise-14 (15-18)
	HM-44	Chapter review and creative questions related to probability

Information and Communication Technology		
Chapter	**Lecture**	**Content**
Chapter-5 Multimedia and Graphics	**ICT-01**	Concept of Multimedia, Presentation Software, Opening Power Point Programme and Creating Slides, Saving Presentation, Adding New Slide, Display Slides in Presentation, Adding or Changing Background to the Slide, Insert Picture in Slide, Inserting Transition into Slide
	ICT-02	Applying Transition Separately in Text, Apply Sound to Transition, Add Video to the Slide
	ICT-03	Graphics Importance of Graphics, To open Photoshop program, To prepare new file in Photoshop program). The Toolbox of Photoshop and Palette Distinction, Selection of Tools and Acquaintance of Move Tools, Selection of Tools and Acquaintance of Move Tools Re-Discussion, Shifting of Selection, Fill Color in the Floating Selection, The Use of Feather, Select with Lasso Tool and Polygonal Lasso Tool, Stroke, Saving File, Layer, Insert New Layer, Thumbnail Icon, Make picture visible and Invisible on layers, Making Layer Object, Preparing Text Layer, Transferring Picture from One File to Another, Fixing Target Layer, Changing the Opacity of the Layer, Removing Layer, Combining or Merging layers
	ICT-04	Cut, Copy, Paste and Paste into, The Use of Crop Tool, Cropping up Tilted Picture, Use of Eraser Tool, Creating Blend with Gradient Tool, To create linear blend with gradient tool, Editing Gradient, Adding and Removing New Color and Color Stops, Adjusting Brightness and Contrast of Picture
	ICT-05	Illustrator, To Open File in illustrator, Work Tools, Title Bar, Names of the Necessary Tools of the Toolbox, Filling Color on Object, Color, Gradient, and None , Increasing and Reducing the Size of Object, Changing the Positioning of Page By Hand Tool, Mode of Viewing Object, Creating Object, Selecting Object and Erasing Borderline or Path, Path, Selection Tool, Direct Selection Tool, Grouping Object, Lock the Objects, Use of Cut, Copy and Paste Command
	ICT-06	Layer, Creating New Layers, Cancelling Layer, Merging Layers, Use of Color in Object, Color Palette, Fill Color, The Use of Stroke, Pen and Pencil Tool, Closed Path and Opened Path, Pencil Tool and Pen Tool, Editing Path, Adding Anchor Point, Removing Anchor Point, Editing Curve Path, Writing Job, Point Text, Editing Writing, Selecting Letters, Changing Color of Letters, Deleting Letters, Enlarging or Reducing Font Size, Increasing or Decreasing Font Size Vertically and Horizontally, Baseline Shift, The Leading, Area Text, Typing in the Path, Typing outside Circular Object, Arranging Writing in Open Path, Creating Outline of Letters, Placement of Image in Illustrator
Chapter-6 Problem Solving through Programming	**ICT-07**	Programming in problem solving, Programming Language, What is machine code or machine language, (Compiler, Interpreter)
	ICT-08	Which Programming Language to Learn, Starting the Journey of Programming in Python
	ICT-09	To Show Text, Using Variables in the programme (Variable) Naming the Variables
	ICT-10	Storing or assigning data to variables, Data Type-(a) int: (b) float: (c) str: (d) bool, Change of Data Type: Type Casting, Taking Data Input in a Program
	ICT-11	Arithmetic Operations, Operators for comparison and their use
	ICT-12	Using Conditions in the Program, if...else statement, The match statement
	ICT-13	Repeating the same task: Using loops in programming , for loop statement, While loop
	ICT-14	Continue Statement, Break statement