

**Udvas** Academic and Admission care

Class 10 Academic Program-2023(Online)

**Course Description**

SI No.	Subject	Lecture number	Number of Exam
01	Physics	28	❖ Daily Exam- 90 ❖ Chapter wise Exam- 37 ❖ Evaluation Test- 12
02	Chemistry	24	
03	Mathematics	52	
04	Higher Mathematics	44	
05	Biology	22	
06	ICT	10	
Total Lecture number		180	

**All the chapters that will be taught in 10th class**

Serial No	Subject	Chapter
01	Physics	9, 10, 11, 12, 13,14
02	Chemistry	9, 10, 11, 12
03	Mathematics	3, 8.2, 8.3, 8.4, 8.5, 10, 11.2, 12, 13, 14, 15, 16.3, 16.4, 17
04	Higher Mathematics	5.4, 5.5, 5.6, 5.7, 6.1, 6.2, 6.3, 7, 8.2, 8.3, 9.2, 10, 11.3, 11. 4, 12, 13, 14
05	Biology	9, 11, 12, 13, 14
06	ICT	5, 6

**Syllabus****Physics**

Chapter	Day	Lecture	Topics
Chapter 09 (Refraction of Light)	Day-01	P-01	Refraction of light, Laws of Refraction, relative and absolute refractive Index
		P-02	Critical angle, Total internal reflection and mathematical problems
	Day-02	P-03	Rainbow, Mirage, Uses of reflection, Optical fiber, Periscope and Binocular, Prism
		P-04	Lens, Types of lenses (convex and concave lens), Expressions related to lens, Sign convention for lens

	Day-03	P-05	Convex lens (At a distance less than Focal Length, At focal length, outside the focal length)
		P-06	Power of lens, Function of the Eye, Perception of colored objects
Chapter 10 (Static Electricity)	Day-04	P-07	Charge, Static Electricity by friction, Electrical induction
		P-08	Electroscope and electric force
	Day-05	P-09	Mathematical problems on Electric Force, Electric Field and Electric Potential
		P-10	Potential difference and mathematical problems
	Day-06	P-11	Capacitor and related problems, Uses of static electricity
		P-12	Revision of electric force, Electric potential, Potential difference and capacitor
Chapter 11 (Current Electricity)	Day-07	P-13	Electric current, Electric force and potential difference, Conductor, insulator and semiconductor, Direction of electric flow
		P-14	Relation between potential difference and electricity, Ohm's Law, Resistance, Specific resistance and related mathematical problems
	Day-08	P-15	Circuit, Equivalent resistance (Series circuit and parallel circuit)
		P-16	Mathematical problems on circuit and equivalent resistance
	Day-09	P-17	Electric power, electrical supply, mathematical problems on electric Power
		P-18	Safe use of electricity, Design of circuit in residence, review of mathematical problems
Chapter 12 (Magnetic Effects of Current)	Day-10	P-19	Magnet, magnetic effects of current, Solenoid
		P-20	Electromagnet, effect of magnet on a current carrying wire
	Day-11	P-21	DC motor, electromagnetic induction, Generator
		P-22	Transformer and mathematical problems
Chapter 13 (Modern Physics and Electronics)	Day-12	P-23	Radioactivity, Characteristics of Alpha, Beta and Gamma ray, half life
		P-24	Uses of radioactivity, Cautions about radioactivity, Development of electronics, Analog and Digital electronics, Semiconductor
	Day-13	P-25	Diode, Transistor
		P-26	Working procedure of microphone, Speaker, Radio, Telephone and Fax, Effective use of ICT
Chapter 14 (Physics to Save Life)	Day-14	P-27	Contribution of Jagadish Chandra Bose, X-Ray, Ultrasonography, CT scan
		P-28	MRI, Angiography, Endoscopy, ECG, ETT, Radio Therapy, Isotopes

## Chemistry

Chapter	Day	Lecture	Topics
Chapter-9 (Acid-Base Balance)	Day-01	C-01	Acid, Demonstrating properties of dilute acids through experiments, The role of water in chemical properties of acids, Alkali & Base, Properties of dilute bases
		C-02	Dilute base in reaction with metallic salts, The role of water in chemical properties of Alkali, Corrosive properties of concentrated acids and alkali
	Day-02	C-03	Revision, the conception of pH, Measuring pH, Importance of pH, Neutralization Reaction (Importance of Neutralization Reaction in daily life, Salt), Acid rain
		C-04	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)	Day-03	C-05	Mineral resources, Rocks, Minerals & Ores, Metal Extraction (Crushing the ores, Condensation of ores)
		C-06	Metal Extraction (Conversion of condensed ore to oxides, Conversion of Metallic oxides to free metals), Purification of metals, Selected alloys
	Day-04	C-07	Symptoms, causes and prevention of corrosion of certain metals and alloys, Recycling of metals
		C-08	Nonmetal minerals (Sulphur, Use of sulphur, Sulphur di oxide, Sulphuric acid, Preparation of sulphuric acid by contact method)
Chapter-11 (Mineral Resources : Fossils)	Day-05	C-09	Fossil Fuel, Natural gas, Constituents of petroleum & their separation, Hydrocarbon (Aliphatic Hydrocarbon) Availability of organic compounds
		C-10	Functional group & Homologous series
	Day-06	C-11	Aromatic Hydrocarbon, Saturated Hydrocarbons (Alkane)
		C-12	Preparation of Alkane & Characteristic Reactions
	Day-07	C-13	Unsaturated Hydrocarbons: Alkene & Alkyne
		C-14	Preparation of alkene & alkyne, Characteristic reactions
	Day-08	C-15	Alcohol, Aldehyde, preparation of fatty acid, Chemical Properties of fatty acid
		C-16	Alcohol, aldehyde, Characteristic reactions of fatty acid
Day-09	C-17	Preparation of alcohol, aldehyde & fatty acid from hydrocarbon	
	C-18	Uses of alcohol, aldehyde & fatty acid, polymer, conversion, important reactions	
Chapter-12 (Chemistry in Our Lives)	Day-10	C-19	Domestic Chemistry (Edible salt, Baking powder, Vinegar, Soft drinks)
		C-20	Chemistry for Cleanliness (Washing soda, Toilet Cleaner)
	Day-11	C-21	Soap, Detergent and it's working mechanism, Bleaching powder
		C-22	Important reactions and working mechanisms (Revision)
	Day-12	C-23	Laboratory production of ammonia gas & Industrial production ammonia gas, Chemistry in agriculture & industry
		C-24	Preservative, Glass Cleaner, Toilet Cleaner

## Mathematics

Chapter	Day	Lecture	Topics
Chapter-03 (Algebraic Expression)	Day-01	GM-01	Resolving into factors, Techniques for determining factors, work, Exercise-3.3 (1-15)
		GM-02	Exercise-3.3 (16-25)
	Day-02	GM-03	Exercise-3.3 (26-31), concept of remainder theorem, concept of factorization theorem, example, exercise
		GM-04	Exercise-3.4 (1-16)
Chapter-08 (Circle)	Day-03	GM-05	Circle arc, inscribed angle, central angle, Theorem- 20, 21, 22
		GM-06	Exercise – 8.2
	Day-04	GM-07	Theorem related to quadrilateral inscribed in a circle (23, 24), Exercise- 8.3 (1, 2)
		GM-08	Exercise – 8.3 (3-7)
Chapter-11 (Algebraic Ratio and Proportion)	Day-05	GM-09	Continued Proportions, Ratio, Exercise-11.2 (1-14)
		GM-10	Exercise-11.2 (15-25)
Chapter-13 (Finite series)	Day-06	GM-11	Sequences, Series, Arithmetic series, Determination of general term of arithmetic series, Sum of n terms of arithmetic series, Examples (1-6), Exercise- 13.1(1-7, 9-18)
		GM-12	Exercise 13.1(8, 19-24)
Chapter-17 (Statistics)	Day-07	GM-13	Cumulative frequency, frequency distribution table, Mass Polygons, Ogive curve
		GM-14	Determination of mean, Determination of arithmetic mean in short cut method
	Day-08	GM-15	Concept of median, Examples, Exercises- 17
		GM-6	Concept of mode, Examples, Exercises - 17
Chapter-13 (Finite series)	Day-09	GM-17	Finding the sum of the squares and cubes of the first n natural numbers, Exercise 13.2 (18, 19, 20, 21) Work, Examples, Geometric series, Common terms, Examples, Exercise-13.2 (1-5, 7, 8- 11)
		GM-18	Determining sums of terms in geometric series, Exercise 13.2 (6, 12- 17, 22-25) HW: (Example-12)
Chapter-10 (Distance and Elevation)	Day-10	GM-19	Angle of elevation and angle of declination, Example, Exercise-10 (1- 13)
		GM-20	Exercise-10 (14-21), Work
Chapter-03 (Algebraic Expressions)	Day-11	GM-21	Forming and applying algebraic formulae in solving real life problems (Related to payable and attainable, time and work, time and distance), Exercise-3.5 (14-19)
		GM-22	Forming and applying algebraic formulae in solving real life problems (related to pipe and water tank, profit-loss), Exercise – 3.5 (20-25)
	Day-12	GM-23	Formulation of Algebraic Formulas (Investment-Profit), Exercise-3.5 (26-33)
		GM-24	Exercise – 3.5 (34-38)

Chapter-14 (Ratio, Similarity and Symmetry)	Day-13	GM-25	Properties of Ratios and Proportions, Geometric Proportions, Theorems: 28, 29, 30, 31
		GM-26	Exercise – 14.1 (1-5)
	Day-14	GM-27	Exercise-14.1 (6-9), Congruence (Equiangular Polygons, Similar Polygons), Theorem: (32-34)
		GM-28	Exercise-14.2(5,6,7); Theorem: 35, Concept of Division of Line Segments in Fixed Ratio, Construction- 12
	Day-15	GM-29	Exercise-14.2(8-13)
		GM-30	Symmetry, Lines of Symmetry of Regular Polygons, Rotational Symmetry and Line Symmetry, Exercise-14.3
Chapter-15 (Area Related Theorem and Construction)	Day-16	GM-31	Area of a Plane, Theorem-36, 37, 38, Exercise- 15 (1-7)
		GM-32	Exercise-15 (8-12)
	Day-17	GM-33	Theorem-39 (Pythagorean Theorem), Construction: 13, 14, 15
		GM-34	Exercise 15 (13-18)
Chapter-08 (Circle)	Day-18	GM-35	Secants of Circle, Tangents, Common Tangents, Theorems (25, 26, 27)
		GM-36	Exercise – 8.4 (1-6)
	Day-19	GM-37	Constructions related to Circle (6-11), Exercise- 8.5 (12, 13, 14)
		GM-38	Exercise- 8.5 (9-11, 15-19)
Chapter-12 (Simple Simultaneous Equations in Two Variables)	Day-20	GM-39	Simple simultaneous equations, Compatibility for the solutions of simple simultaneous equations in two variables, Exercise-12.1
		GM-40	Solving Simple Equations (Substitution Method, Elimination Method), Exercise-12.2 (1-6)
	Day-21	GM-41	Solving Simple Simultaneous Equations (Cross Multiplication Method), Exercise- 12.2 (7-12)
		GM-42	Graphical Method, Exercise – 12.3
	Day-22	GM-43	Formation of simultaneous equations from real life problems and solution. Exercise-12.4(10-19)
		GM-44	Exercise – 12.4 (20-24)
Chapter-16 (Mensuration)	Day-23	GM-45	Circumference of a circle, length of arc segment, area of a circle, example, work, exercise - 16.3 (10) complete
		GM-46	Exercise – 16.3 (1-9)
	Day-24	GM-47	Rectangular Solids, Cubes, Exercise - 16.4 (8-13)
		GM-48	Cylinder, Exercise- 16.4 (14-21)
Chapter-03 (Algebraic Expressions)	Day-25	GM-49	Exercise – 3.1, 3.2
		GM-50	Exercise – 3.3, 3.4 (Re-discussion)
	Day-26	GM-51	Exercise – 3.5 (Re-discussion)
		GM-52	Chapter-3 (Discussion of Board Standard Creative and Multiple-Choice Questions)



	Day-16	HM-31	Mutually exclusive events, mutually non-exclusive events, Concept of exclusive events (When to multiply / add), Exercise-14 (15-18)
		HM-32	Chapter review and creative questions related to probability
Chapter-12 (Planar Vector)	Day-17	HM-33	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-34	(1-8, 10, 12) of Exercise-12, Example-4
	Day-18	HM-35	Position vectors, Example-3, 5, Exercise-12(9, 11)
		HM-36	(13-16) of Exercise-12
Chapter-10 (Binomial Expansion)	Day-19	HM-37	Binomial expansion of $(1 + y)^n$ , Use of Pascal's Triangle, Example (1, 2, 3), Exercise- 10.1 (1, 2, 4, 5, 6)
		HM-38	Relation between ${}^n C_r$ and $n!$ , Example (4), Exercise-10.1 (3), Binomial expansion of $(x + y)^n$
	Day-20	HM-39	$n!$ and finding the value of ${}^n C_r$ , finding the $(r+1)$ th term, Exercise-10.2 (10-14); HW: Example (10)
		HM-40	Exercise-10.2 (15-19)
Chapter-09 (Exponential and Logarithmic Functions)	Day-21	HM-41	Examples (18-29), Work on page 211
		HM-42	Exercise-9.2 (a, b, c, d, e of 6 and 7)
	Day-22	HM-43	Exercise-9.2 (f, g, h of 7), Examples (31, 33), Exercise-9.2 (10, 11, 12)
		HM-44	Logarithmic and absolute value functions, Graph of functions, Exercise-9.2 (8, 9, 13, 14, 15)

## Biology

Chapter	Day	Lecture	Topics
Chapter-09 (Firmness and Locomotion)	Day-01	B-01	Introductions of human skeleton, Role of skeleton in firmness and locomotion
		B-02	Bone, Cartilage, Joint (Synovial joint, Types of joint)
	Day-02	B-03	Muscles, Roles of bones and muscles in human locomotion, Tendon and ligament
		B-04	Diseases of bones (Osteoporosis, Rheumatoid arthritis) (Review of the chapter)
Chapter-11 (Reproduction in Organism)	Day-03	B-05	Concept of reproduction in organism and its significance, Plant reproduction (Reproductive organ: Flower, Different parts of a flower)
		B-06	Inflorescence, Pollination, Medium of pollination
	Day-04	B-07	Microsporogenesis, Megasporogenesis
		B-08	Fertilization, Development of new sporophyte, Origin of fruits
	Day-05	B-09	Animal reproduction and fertilization, The basic significance of fertilization, Role of hormone in human reproduction

		B-10	Development of the embryo, Placenta, Fetal membrane, Reproduction related disease (AIDS)
Chapter-12 (Heredity in Organisms and Evolution)	Day-06	B-11	Heredity in organism, Components carrying (heredity materials) behavioural features to the offspring from generation to generation, Chromosome, DNA
		B-12	RNA, Gene, DNA replication
	Day-07	B-13	DNA test, Determination of human sex
		B-14	Genetic disorder (Colour blindness, Thalassemia)
	Day-08	B-15	Theories of evolution of organisms, Origin of life
		B-16	Theory of Darwin and significance of evolution in surviving of species
Chapter-13 (Environment of life)	Day-09	B-17	Ecosystem, Components of ecosystem, Ecosystem of a pond
		B-18	Food chain (Predator food chain, Parasitic food chain, Saprophytic food chain), Food web, Nutrition flow in ecosystem, Energy flow in ecosystem
	Day-10	B-19	Relation of energy between trophic levels, Concept of energy pyramid, Effect of energy pyramid to keep food chain in limit, Biodiversity, Types of biodiversity, Effect of biodiversity on maintenance of stability in an ecosystem
		B-20	Interaction and interdependence among different organisms and balance of environment), Positive interaction, Negative interaction, Significance and method of conserving environment
Chapter-14 (Biotechnology)	Day-11	B-21	Biotechnology, Stages of Tissue culture, Uses of tissue culture
		B-22	Genetic engineering, Stages of the preparation of GMO or DNA recombinant, Genetic engineering in use

**ICT**

Chapter	Day	Lecture	Topics
Chapter 05 (Multimedia and Graphics)	Day-01	ICT-01	Concept of Multimedia, Presentation Software, Opening Power Point and Creating a Slide, Saving Presentation, Adding New Slide, Slide Show, Changing Slide Background, Inserting Pictures, Adding Transition, Applying Transition Separately in Text, Adding video in slide
		ICT-02	Graphics (Importance of Graphics, Opening the Photoshop Program, creating a new file), Introduction to the Photoshop Toolbox and Palette, Acquaintance of the Selection and Move tool
	Day-02	ICT-03	Revision of Selection and Move Tool, Shifting Selection, Fill Color in the Floating Selection, the use of Feather, Selection using Lasso Tool and



			Polygonal Lasso Tool Stroke, Saving New File, Layer, adding new Layer, Thumbnail Icon, Clustering, Integrating and Segregating Palette, Making Layer Object, creating a Text Layer, Transferring Pictures 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, Creating Linear Blend, Editing Gradient, Adding and Removing New color and Color Stops, Adjusting Brightness and Contrast of Picture	
	Day-03	ICT-05	Illustrator, Open Illustrator Program, open File in Illustrator, work Tools, 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 and Reducing Font Size, Increasing or Decreasing Font Size Vertically and Horizontally, Baseline Shift, The Leading, Area Text, Trying in the Pat, Trying outside circular Object, Creating Outline of Letters, Placement of Image in Illustrator	
	Chapter 06 (The Use of Database)	Day-04	ICT-07	The concept of Database, Characteristics of Database Program, the concept of Database and Access, Preparation for Starting work in Access Program, Opening Access Program, Creating Database Table, Data Entry, Changing Font size, Correctio of spelling error
			ICT-08	Closing and Opening of a Database File, To open a closed file, Inserting new field and column to Table, Delete Field or Column, Deleting Records or Rows
Day-05		ICT-09	Alphabetical and Cardinal sorting of Data, Searching Information, Searching Conditional Information, Searching Information on the basis of Village name, Viewing Records of More Villages, Searching Information on the basis of Male/Female, Query and Report	
		ICT-10	Collecting and Saving Information in Query Method, Collecting Information on the Basis of Villages and Union in Query Process, Adding Gridlines to Report	