Udvash Academic & Admission Care

HSC Science Foundation Course

Class & Exam Routine (Sun-Tue-Thu Batch)

Date & Day	Class	Daily Exam
13.06.23(Tuesday)	**H.Math (HM-01)**	Introductory Exam
	H.Math (HM-02)	Written (2×5=10) & MCQ (10×1=10); 20 min.
15.06.23 (Thursday)	**Physics (P-01)**	Daily Exam (HM-01+02)
	Physics (P-02)	Written (2×5=10) & MCQ (10×1=10); 20 min.
18.06.23 (Sunday)	**Chemistry (C-01)**	Daily Exam (P-01+02)
	Chemistry (C-02)	Written (2×5=10) & MCQ (10×1=10); 20 min.
20,06.23(Tuesday)	**H.Math (HM-03)**	Daily Exam (C-01+02)
	H.Math (HM-04)	Written (2×5=10) & MCQ (10×1=10); 20 min.
22.06.23 (Thursday)	**Physics (P-03)**	Daily Exam (HM-03+04)
	Physics (P-04)	Written (2×5=10) & MCQ (10×1=10); 20 min.
25.06.23 (Sunday)	**Chemistry (C-03)**	Daily Exam (P-03+04)
	Chemistry (C-04)	Written (2×5=10) & MCQ (10×1=10); 20 min.
All activities will be closed from June 26 to July 5 on the occasion of Eid-ul-Azha		
06.07.23 (Thursday)	**H.Math (HM-05)**	Daily Exam (C-03+04)
	H.Math (HM-06)	Written (2×5=10) & MCQ (10×1=10); 20 min.
09.07.23 (Sunday)	**Physics (P-05)**	Daily Exam (HM-05+06)
	Physics (P-06)	Written (2×5=10) & MCQ (10×1=10); 20 min.
11.07.23 (Tuesday)	**Chemistry (C-05)**	Daily Exam (P-05+06)
	Chemistry (C-06)	Written (2×5=10) & MCQ (10×1=10); 20 min.
13.07.23 (Thursday)	**H.Math (HM-07)**	Daily Exam (C-05+06)
	H.Math (HM-08)	Written (2×5=10) & MCQ (10×1=10); 20 min.
16.07.23 (Sunday)	**Physics (P-07)**	Daily Exam (HM-07+08)
	Physics (P-08)	Written (2×5=10) & MCQ (10×1=10); 20 min.
18.07.23 (Tuesday)	**Chemistry (C-07)**	Daily Exam (P-07+08)
	Chemistry (C-08)	Written (2×5=10) & MCQ (10×1=10); 20 min.
20.07.23 (Thursday)	**H.Math (HM-09)**	Daily Exam (C-07+08)
	H.Math (HM-10)	Written (2×5=10) & MCQ (10×1=10); 20 min.
23.07.23 (Sunday)	**Physics (P-09)**	Daily Exam (HM-09+10)
	Physics (P-10)	Written (2×5=10) & MCQ (10×1=10); 20 min.
25.07.23 (Tuesday)	**Chemistry (C-09)**	Daily Exam (P-09+10)
	Chemistry (C-10)	Written (2×5=10) & MCQ (10×1=10); 20 min.
26.07.23 (Wednesday)	---	Daily Exam (C-09+10)
		Written (2×5=10) & MCQ (10×1=10); 20 min.

HSC Science Foundation Course (Syllabus)

Lecture	Syllabus
Physics	
P-01	Primary concept of vector, Vector (displacement & distance), Categories of vector quantities, Resultant of vector, Parallelogram law.
P-02	Components of vector and their application, Some characteristics of vector addition, Mathematical problems, Application in practical life.
P-03	Newton's laws of motion, Different types of force, Momentum, Application in practical life.
P-04	Conservation of momentum and its application, Collision, Elastic and inelastic collision.
P-05	Primary concepts of work, Different factors of work, Relationship between work and energy, Work-Energy theorem.
P-06	Law of gravitation and gravitational constant, Significance and application of the law of gravitation, Acceleration due to gravity and its variance.
P-07	Coulomb's law, Applications and limitations of Coulomb's law, Practical and Mathematical examples.
P-08	Introduction to electric field intensity and potential, Practical examples and explanation.
P-09	Ohm's law, Electromotive force, Internal resistance, Potential difference, Resistance and electric cell.
P-10	Concept of variance of potential at different points in a circuit, Series and parallel combinations, Potential difference, current and power in different circuit combinations.
Chemistry	
C-01	Fundamental particles of atom, Orbit and orbital, Quantum numbers.
C-02	Principles of electronic configuration of atom (Aufbau, Hund, Pauli's exclusion), Different orbital and electron capacity, Electron configuration of first 30 elements, Determining position of elements in the periodic table.
C-03	IUPAC approved modern periodic table, Periodic properties of elements of different blocks (s, p, d, f).
C-04	Factors influencing (along with exception) ionization energy, electron affinity, electro-negativity and polarity.
C-05	Mole number, Equivalent number, Molarity of solution, Normality and Concentration in percentage composition.
C-06	Stoichiometry, Solution of problems based on chemical equations.
C-07	Concept of oxidation-reduction, Redox reaction, Determination of oxidation number.
C-08	Identification of oxidant and reductant, Balancing redox reactions and solution of mathematical problems
C-09	Introduction to organic compound, Classification of organic compound, Homologous series and functional group, Naming of organic compounds under same homologous series (up to hydrocarbon).
C-10	Naming of organic compounds (Remaining part), Reagents (Nucleophilic and Electrophilic), Addition of organic compounds (Hydrogenation, Halogenation, Markovnikov rule), Substitution and oxidation-reaction.
HMath	
HM-01	The principle of addition and multiplication, Primary concept of permutation (Discussion on ${}^{n}P_{r}, n!$), Primary concept of combination (Discussion on ${}^{n}C_{r}$).
HM-02	Interval, solution of inequality, Introduction to imaginary number i, Power of i, Rotation of a number multiplying with i, Introduction to complex number, Complex numbers in different quadrants.
HM-03	Polar and cartesian co-ordinate systems and their conversion, Distance between two points, Concept of stationary and continuous points, Concept of locus.
HM-04	Definition of circle, Equation of locus of circle in different cases, Condition for being a circle, Condition of a circle touching two axes.
HM-05	Discussion on relation, Cartesian product, Clear concept of function/relation and difference with the help of mapping, Introduction to Domain & Codomain, Discussion on independent and dependent variables, Identification of function from graph.
HM-06	Determination of domain-range: $y = \frac{ax+b}{cx+d}$; $y = \sqrt{x^2 - a^2}$, $y = \sqrt{a^2 - x^2}$, $y = 2^x$; $y = \log_2 x$, Trigonometric ratio of compound angles (A + B and A – B), Determination of trigonometric ratio for angles 15° and 75°.
HM-07	Difference between undefined and indeterminate, 7 indeterminate forms of mathematics, Existence of limits $\left(\lim_{x\to 3} \frac{x^2-9}{x-3}, \lim_{x\to 0} \frac{\lvert x\rvert}{x}\right)$.
HM-08	Determination of limiting value, Concept of differentiation from graph, Differentiation from first principle, Differentiation of various functions $(y = x^n, \sin x, \cos x, y = \ln x, y = c)$ from first principle, Differentiation of sum, subtraction of two functions.
HM-09	Concept and differentiation of composite function, Slope and equation of tangent of curve. Concept of integration from graph. Integration as Anti-derivative.
HM-10	Some properties of integration, Integral Constant C, Definite integral, Applications of integration.