

# **Major Kalshi Classes**

## **CDS Online Course**

### **Syllabus Session 2020-2021**

# ENGLISH

Sr. No.	Chapter
1	<b>Time &amp; Tense</b>
	Kinds of Tense
	Sequence of Tense
	Uses of Tense
2	<b>Conditional Sentences</b>
3	<b>Question Tag</b>
4	<b>Verb</b>
	Transformation
	Auxiliary
	Modals
	Reflexive
	Causative verbs
5	<b>Finite &amp; Non-finite Verbs</b>
	Non finite
	Participle: Kinds of participle, Use of Participle
	Gerund: use of Gerund
	Infinitive: Use of Infinitive
6	<b>Voice</b>
	Transformation
	Uses
7	<b>Narration</b>
	Assertive
	Interrogative
	Imperative
	Optative
	Exclamatory
8	<b>Noun</b>
	Kinds of Noun
	Proper of Noun
	Common Noun
	Collective Noun
	Material
	Abstract
	Formation of Abstract Noun, Verb-Noun, Adjective Noun, Common Noun Abstract noun
	Noun Gender
	Noun Number
	Noun Case

<b>9</b>	<b>Pronoun</b>
	Kinds of Pronoun
	Use of Pronoun
<b>10</b>	<b>Adjective</b>
	Kinds of Adjective
	Adjectives order before noun
	Adjectives position
	Comparison of degree
	Uses of Adjective
<b>11</b>	<b>Articles</b>
	Kinds of Articles: Use of A/AN
	Use of The
<b>12</b>	<b>Adverb</b>
	Simple
	Interrogative
	Relative
	Position of Adverb
	Inversion
<b>13</b>	<b>Preposition</b>
	Kinds of preposition: Simple
	Compound
	Phrase Preposition
	Participle Preposition
	Relation Expressed by Preposition
	Words followed by preposition
	Correct use of Preposition
<b>14</b>	<b>Conjunction</b>
	Kinds of Conjunction: (a) Co-ordinating conjunction (b) Sub-ordinating conjunction
	Uses of Conjunction
<b>15</b>	<b>Syntax (Subject Verb agreement)</b>
<b>16</b>	<b>Rearrangement of words in a sentence</b>
<b>17</b>	<b>Arrangement of sentences</b>
<b>18</b>	<b>Cloze Test/Fillers</b>
<b>19</b>	<b>Reading Comprehension</b>
<b>20</b>	<b>Idioms &amp; Phrases</b>
<b>21</b>	<b>Synonyms</b>
<b>22</b>	<b>Antonyms</b>
<b>23</b>	<b>One word substitution</b>
<b>24</b>	<b>Spelling Error</b>

# HISTORY

Sr. No.	Chapter
1	<b>History: An Introduction</b>
2	<b>Chalcolithic Culture</b>
	a. Definition
	(i) Cultural based
	(ii) Sources based
	b. Stone Age- Cultural based
	(i) Paleolithic—Achievement
	(ii) Mesolithic—Achievement
	(iii) Neolithic—Achievement
3	<b>Indus Valley Civilization</b>
	a. Naming, Makers, Determination of Time
	b. Expansion
	c. Important cities
	d. Town planning
	e. Political, Social, Religious setup, Economy, Decline
4	<b>Vedic Culture</b>
	<b>a. Sources</b>
	(i) Literacy
	(ii) Archaeological
	<b>b. Culture</b>
	(i) Political
	(ii) Socio- Religions
	(iii) Economy
5	<b>Second Urbanisation in 6<sup>th</sup> Century B.C.</b>
	a. 16 Mahajanpad
	b.(i) Buddhism
	(ii) Jainism
	(iii) Bhagawat
	(iv) Shaivism
	<b>c. Rise of Maghadh Empire</b>
	(i) Haryaka Dynasty
	(ii) Shishunag Dynasty
	(iii) Nand Dynasty
6	<b>Maurya Empire</b>
	<b>a. Sources</b>
	(i) Literacy
	(ii) Archaeological
	<b>b. Culture</b>
	(i) Administration
	(ii) Socio-Religions set-up
	(iii) Economy
	(iv) Military
	(v) Decline
7	<b>Post Maurya Period</b>
	a.(i) Shunga Dynasty
	(ii) Kanva Dynasty
	(iii) Satvahana Dynasty
	b.(i) Greek

	(ii) Shaka
	(iii) Parthians and Kushans
<b>8</b>	<b>Empire and Later Gupta Period (320-550)</b>
	Gupta Period
	(i) Administration- Decentralization
	(ii) Socio-Religions Setup
	(iii) Economy
	(iv) Art and Culture
	(v) Decline
<b>9</b>	<b>Post Gupta Period (North India)</b>
	(i) Harsha Period
	(ii) Important Regional Powers in North India
<b>10</b>	<b>Ancient Indian Culture</b>
<b>11</b>	<b>Political, Social and Cultural Status of South India in The Middle of 8th and 12th Century A.D.</b>
<b>12</b>	<b>Muslim Invasion in India</b>
	a. Md. Bin Kasim
	b. Mohmood Ghaznavi
	c. Md. Gori
<b>13</b>	<b>Delhi Sultanate: Administration Society and Culture</b>
	a. (i) Slave Dynasty, Khilazi Dynasty, Tughlaq Dynasty and Saiyad & Lodi Dynasty
	b. (i) Administration
	(ii) Society
	(iii) Economy
	(iv) Art and Culture
	(v) Decline
	(vi) Bhakti & Sufism Movement
<b>14</b>	<b>Autonomous Provincial Kingdoms of 14th &amp; 15th Century</b>
<b>15</b>	<b>Cultural Development in Sultanate Period</b>
	a. Administration
	b. Socio-Religions setup
	c. Economy
	d. Art & Culture
<b>16</b>	<b>Mughal Empire</b>
	a. Administration
	b. Socio-Religions Setup
	c. Economy
	d. Art & Culture
	e. Decline
<b>17</b>	<b>New Autonomous States of 18th Century</b>
<b>18</b>	<b>Rise of Marathas and Their Growth</b>
	a. Shivaji and his Administration
	b. Peshwas Period and Anglo-Maratha battles and treaty
<b>19</b>	<b>Arrival of European Trading Companies in India</b>
<b>20</b>	<b>East India Company &amp; Nawabs of Bengal</b>
<b>21</b>	<b>Economic Influence of British Rule on India</b>
<b>22</b>	<b>Religious and Social Reform Movements in 19th Century</b>
	a. Cause
	b. Organisation /Institute- BrahmoSamaj, Arya Samaj etc.
	c. Effect
<b>23</b>	<b>1857 Mutiny</b>
	(i) Cause
	(ii) Expansion

	(iii) Effect
24	<b>Other Major Revolts &amp; Movements in India</b>
25	<b>Important Political Organizations Before the Formation of Congress</b>
26	<b>Indian National Congress and its Major Sessions</b>
27	<b>Constitutional Growth of India</b>
28	<b>Development of Education &amp; Newspaper During British Periods</b>
29	<b>British Governors and Governor Generals</b>
	a. Period
	b. Works
30	<b>Indian Freedom Struggle</b>
31	<b>Modern World History</b>

<b>POLITY</b>	
<b>Sr. No.</b>	<b>Chapter</b>
1	The Sources and The Formation Process of Indian Constitution and Scheduled
2	Preamble and Its Inherent Philosophy
3	The Union and Its Territory
4	Citizenship
5	Fundamental Rights
6	Directive Principles of State Policy + Fundamental Duties
7	Union Executive
8	Union Legislature + Parliamentary Terms
9	State Administration
10	Relation Between The Union and The States
11	Judiciary
12	Panchayats, Municipalities and Co-operatives
13	Major Commission and Councils + Special Provisions for Reserved Category
14	Important Constitutional Amendment Acts

# ARITHMETIC

Sr. No.	Chapter
<b>1</b>	<b>Number System</b>
	Introduction
	Place value & face value, classification
	Rules of divisibility
	Division based question
	Addition of natural no. series
	Miscellaneous
<b>2</b>	<b>Square Root &amp; Cube Root</b>
	Introduction
	Difference between Square & square roots
	To find, square & square roots
	Square roots, based question
	Cube & cube roots
	To find cube & cube roots
Cube & cube roots based question	
<b>3</b>	<b>Simplification</b>
	V-BODMAS-rule
	Fractions-based
	Factorization
	Miscellaneous
<b>4</b>	<b>H.C.F. &amp; L.C.M</b>
	<b>H.C.F.</b>
	Definition, to find H.C.F. of various types of numbers
	H. C. F. based question
	<b>L.C.M.</b>
	Definition, to find L.C.M. of all types of numbers
	L. C. M. based questions
Relation between L.C.M. & H.C.F.	
<b>5</b>	<b>Decimal Fraction</b>
	Vulgar fraction
	Types
	Operations
	Comparisons (Increasing & decreasing order)
	Fractions based question
	Types terminating and non terminating
	Operations
<b>6</b>	<b>Surds &amp; Indices</b>
	Introduction
	Basic rules of surds
	Surds based questions
	Basic rules of Indices
	Indices based questions
<b>7</b>	<b>Percentage</b>
	Basic concept & rules to find percentage
	Examination based Questions, increasing, decreasing
	Election based Questions
	Income expenditure & saving based questions
	Vane-diagram based Questions

	Population based question
	Menstruation based question
	Miscellaneous
<b>8</b>	<b>Profit and Loss</b>
	Introduction -what is profit and loss
	To find profit and loss
	To find S. P. and C. P. on profit and loss
	Successive profit % based Questions
	Successive loss %
	Discount
	Equivalent discount
	To find M. R. P.
<b>9</b>	<b>Average</b>
	Introduction of average
	How to find average
	Average of numbers
	Average of ages & weights etc
	Miscellaneous
<b>10</b>	<b>Ratio &amp; Proportion</b>
<b>11</b>	<b>Simple and Compound Interest</b>
	Introduction
	Definition of interest
	Difference between SI & CI
	Rules to find S I & amount
	Rules to find C I & Amount
<b>12</b>	<b>Time and Work</b>
	Relation between workers, works and time
	Ratio based question
	Capacity based question
	Wages based question
	Pipe & cistern bases question
<b>13</b>	<b>Speed, Time and Distance</b>
	General concept and rule and how to find speed, distance and time
	Rules and question of general speed
	Train based question
	Boat and stream
	Average speed
<b>14</b>	<b>Mensuration - I</b>
	<b>2D Unit-Ist</b>
	Triangle
	Quadrilaterals
	Circle
	Miscellaneous
<b>15</b>	<b>Mensuration - II</b>
	<b>3D Unit-2nd</b>
	Cuboids Cube
	Cylinder, Cone
	Sphere, Prism, pyramid, frustum
	Miscellaneous
<b>16</b>	<b>Factor</b>
	Rules of factorization
	Factorization based question



	Miscellaneous
<b>17</b>	<b>Geometry</b>
	Line and parallel lines
	Triangles
	Quadrilaterals
	Circles
	Tangent line
<b>18</b>	<b>Trigonometry</b>
	Measures of angles
	T. Ration
	Identities
	Sum & different of multiple of angles based question
	Height and distance
	Charts and tabulation
<b>19</b>	<b>Allegation</b>
<b>20</b>	<b>Partnership</b>
<b>21</b>	<b>Algebra</b>
<b>22</b>	<b>Quadratic Equation and Inequalities</b>
<b>23</b>	<b>Statistics</b>
<b>24</b>	<b>Data Inerpretation</b>
<b>25</b>	<b>Permutation and Combination</b>
<b>26</b>	<b>Probability</b>
<b>27</b>	<b>Algorithm</b>
<b>28</b>	<b>Set theory</b>

# GEOGRAPHY

Sr. No.	Chapter
1	<b>General Introduction Geography</b>
2	<b>Universe And Solar System</b>
	a. Theory related to the origin of Universe
	b. Star lifecycle & Galaxies
	c. Planets & their satellites
	d. Sun (Depth)
	e. Dwarf planets, comet, meteors & Asteroid
3	<b>Earth &amp; Solar Connection</b>
	a. Latitudes & Longitudes
	b. Solstices, Equinoxes, Aphelion & Perihelion, Apogee Perigee (Moon)
	c. Time Zone & International Date Line
	d. Questions on Time Zone
4	<b>Motion of Earth</b>
	a. Rotation & Revolution
	b. Solstices Equinoxes, Aphelion, Perihelion, Apogee Perigee
	c. Super Moon, Blood Moon, Blue Moon
5	<b>Origin of Earth &amp; its Internal Constitution</b>
	a. Theories
	b. Crust, Mantle & Core (formation & characteristics)
6	<b>Lithosphere</b>
	a. Rock
	(i) Igneous Rock
	(ii) Sedimentary Rock
	(iii) Metamorphic Rock
	b. Volcanoes (Types & Ex.)
	c. Earthquake (Seismic waves type)
	d. Mountains (Types & Ranges)
	e. Plateau (Types & Ex.)
	f. Plains (Types & Ex.)
	g. Soils (Types & Ex.)
	h. Desert (Types & Ex.)
	i. Islands (Types & Ex.)
	j. Continents & Nation States
	k. Landforms
7	<b>Hydrosphere</b>
	a. Oceans
	b. Continental Shelf, Slope, Rise & Plain
	c. Oceanic Current
	d. Rivers, Lakes & Deltas (Types & Ex.)
	e. Straits
	f. Ports of World
8	<b>Atmosphere</b>
	a. Composition & Gases
	b. Solar Isolation
	c. Atmospheric Pressure
	d. Wind
	(i) Trade Wind
	(ii) Westerlies

	(iii) Temperate/Polar
	(iv) Local
	(v) Land/Sea
	(vi) Anabatic/Katabatic wind
	e. Cyclone & Anticyclone
	f. Humidity & Clouds
<b>9</b>	<b>Miscellaneous</b>
	a. Discoveries
	b. Landscape
	c. Climate & Vegetation
	d. Crops/Shifting cultivation
	e. Line Marked on maps
	f. Tribes of the world
	g. Others
<b>10</b>	<b>Position of India</b>
	a. Latitudinal, Longitudinal, Frontiers, Maritime Borders
	b. Neighboring States & Boundary Lines
	c. Tropic of Cancer
<b>11</b>	<b>High Land &amp; Geographical Region</b>
	a. Physical Division of India
	b. Montana Region (Peaks, Passes, Valley Ranges)
	c. Northern Plain
	d. Peninsular Plateau (Highlands & Hills)
	e. Coastal Plains
	f. Islands
<b>12</b>	<b>Rivers of India</b>
	a. Drainage Pattern
	b. Rivers
	(i) Himalayas
	(ii) Peninsular (East Flowing, West Flowing)
<b>13</b>	<b>Lakes of India</b>
	a. Types
	b. Major Lakes & Waterfalls
<b>14</b>	<b>Climates of India</b>
	a. ITCZ
	b. South West Monsoon
	c. Arabian Sea Branch
	d. Bay of Bengal Branch
	e. North East Monsoon
	f. Rainfall
	g. Climatic Regions
<b>15</b>	<b>Soils of India</b>
	a. Types & Formation
	b. Alluvial Soil
	c. Black Soil
	d. Red Soil
	e. Laterite Soil
	f. Mountainous soil
	g. Sandy Soil
	h. Alkaline Soil
	i. Organic Soil
<b>16</b>	<b>Vegetations of India</b>

	a. Types of Forests
	b. Forest & Important trees
<b>17</b>	<b>Wildlife in India</b>
	a. Important Facts
	b. Wildlife Sanctuary, National Parks
	c. States Official Birds Animals
<b>18</b>	<b>Agriculture In India</b>
	a. Crop Seasons & Crops
	(i) Rabi
	(ii) Kharif
	(iii) Jayad
	b. Classification of Crops
<b>19</b>	<b>Irrigation In India</b>
	a. Important Facts
	b. River Valley Projects, Canals, Dams
<b>20</b>	<b>Minerals in India</b>
	a. Important Facts
	b. Ores
	c. Important Minerals & Where we founds
	d. Coal types & Region
<b>21</b>	<b>Manufacturing Industries of India</b>
	a. Factors which influence Industrial development
	b. Maharatna, Navratna&Miniratna Industries
	c. Industries (Iron & Steel, Ships, Oil Refining)
	d. Other Facts
<b>22</b>	<b>Transportation</b>
	a. About NHAI
	b. N.H.
	c. Facts about N.H.
	d. Railway (Zones & H.Q.)
	e. Inland water ways
	f. International Air Ports (India & World)
	g. Pipelines
<b>23</b>	<b>Human Tribes in India</b>
	a. Statewise Tribe
	b. Their Language & Family
	c. World Wide
<b>24</b>	<b>Population of India</b>
	a. Facts of 2011 Census
<b>25</b>	<b>Miscellaneous</b>
	a. World Heritage sites & Biosphere Reserve
	b. Geographical Subnames/Nicknames
	c. G.I. Tags & Temple
	d. Institutions & events

<b>Economics</b>	
<b>26</b>	Indian Economy
<b>27</b>	Economic concept
<b>28</b>	Planning
<b>29</b>	Primary Sector of I.E.
<b>30</b>	Secondary Sector of I.E.
<b>31</b>	Tertiary Sector of I.E.
<b>32</b>	Poverty, Unemployment & Development Programmes in India
<b>33</b>	Foreign Trade in India
<b>34</b>	Banking & Financial system
<b>35</b>	Indian Financial Market
<b>36</b>	Public Finance
<b>37</b>	Current Budget, Economic Survey & Economic Data

# General Science (PHYSICS)

S.N.	Chapter		
<b>1</b>	<b>Physical World and Measurement</b>		
1	What is physics?	<b>7</b>	Measurement of time
2	Fundamental forces in nature	<b>8</b>	Accuracy, precision of instruments and errors in measurement
3	Nature of Physical laws	<b>9</b>	Significant figures
4	The international system of units	<b>10</b>	Dimensions of physical quantities
5	Measurement of length	<b>11</b>	Dimensional formulae and dimensional equations
6	Measurement of mass	<b>12</b>	Dimensional analysis and its applications
<b>2</b>	<b>Uniform Motion</b>		
1	Position, path length and displacement	<b>5</b>	Kinematic equations for uniformly accelerated motion
2	Average velocity and average speed	<b>6</b>	Relative velocity
3	Instantaneous velocity and speed	<b>7</b>	Projectile motion
4	Acceleration		
<b>3</b>	<b>Law of Motion</b>		
1	The law of inertia	<b>5</b>	Conservation of momentum
2	Newton's first law of motion	<b>6</b>	Equilibrium of a particle
3	Newton's second law of motion	<b>7</b>	Common forces in mechanics
4	Newton's third law of motion	<b>8</b>	Circular motion
<b>4</b>	<b>Work, Energy and Power</b>		
1	Notions of work and kinetic energy : The work-energy theorem	<b>7</b>	The conservation of mechanical energy
2	Work	<b>8</b>	The potential energy of a spring
3	Kinetic energy	<b>9</b>	Various forms of energy : The law of conservation of energy
4	Work done by a variable force	<b>10</b>	Power
5	The work energy theorem for a variable force	<b>11</b>	Collisions
6	The concept of potential energy		
<b>5</b>	<b>Centre of Mass and Rotational Mechanics</b>		
1	Centre of mass	<b>6</b>	Equilibrium of a rigid body
2	Motion of centre of mass	<b>7</b>	Moment of inertia
3	Linear momentum of a system of particles	<b>8</b>	Theorems of perpendicular and parallel axes
4	Angular velocity and its relation with linear velocity	<b>9</b>	Rolling motion
5	Torque and angular momentum		
<b>6</b>	<b>Gravitation</b>		
1	Kepler's Law	<b>7</b>	Escape speed
2	Universal law of gravitation	<b>8</b>	Earth satellite
3	The gravitational constant	<b>9</b>	Energy of an orbiting satellite
4	Acceleration due to gravity of the earth	<b>10</b>	Geostationary and polar satellites
5	Acceleration due to gravity below and above the surface of earth	<b>11</b>	Weightlessness
6	Gravitational potential energy		
<b>7</b>	<b>Properties of Matter</b>		
1	Elastic behaviour of solids	<b>12</b>	Surface tension
2	Stress and strain	<b>13</b>	Temperature and heat
3	Hooke's law	<b>14</b>	Measurement of temperature
4	Stress-strain curve	<b>15</b>	Ideal-gas equation and absolute temperature

5	Elastic moduli	16	Thermal expansion
6	Applications of elastic behaviour of materials	17	Specific heat capacity
7	Pressure	18	Calorimetry
8	Streamline flow	19	Change of state
9	Bernoulli's principle	20	Heat transfer
10	Viscosity	21	Newton's law of cooling
11	Reynolds number		
<b>8</b>	<b>Thermo-Dynamics</b>		
1	Thermal equilibrium	7	Thermodynamic processes
2	Zeroth law of thermodynamics	8	Heat engines
3	Heat, internal energy and work	9	Refrigerators and heat pumps
4	First law of thermodynamics	10	Second law of thermodynamics
5	Specific heat capacity	11	Reversible and irreversible processes
6	Thermodynamic state variables and equation of state	12	Carnot engine
<b>9</b>	<b>Kinetic Theory of Gas</b>		
1	Molecular nature of matter	4	Law of equipartition of energy
2	Behaviour of gases	5	Specific heat capacity
3	Kinetic theory of an ideal gas	6	Mean free path
<b>10</b>	<b>Electrostatics</b>		
1	Electric charges	16	Potential due to a Point Charge
2	Conductors and Insulators	17	Potential due to an Electric Dipole
3	Charging by Induction	18	Potential due to a System of Charges
4	Basic properties of electric charge	19	Equipotential Surfaces
5	Coulomb's law	20	Potential Energy of a System of Charges
6	Forces between Multiple charges	21	Potential Energy in an External Field
7	Electric field	22	Electrostatics of Conductors
8	Electric field lines	23	Dielectrics and Polarisation
9	Electric Flux	24	Capacitors and Capacitance
10	Electric Dipole	25	The Parallel plate capacitor
11	Dipole in a uniform external field	26	Effect of Dielectric on Capacitance
12	Continuous Charge Distribution	27	Combination of Capacitors
13	Gauss's Law	28	Energy Stored in a Capacitor
14	Application of Gauss's Law	29	Van de Graaff Generator
15	Electrostatics Potential		
<b>11</b>	<b>Electric Current and Resistance</b>		
1	Electric Current	9	Combination of Resistors- Series and Parallel
2	Electric Currents in Conductors	10	Cells, emf, Internal Resistance
3	Ohm's Law	11	Cells in Series and in Parallel
4	Drift of Electrons and the Origin of Resistivity	12	Kirchhoff's Law
5	Limitations of Ohm's Law	13	Wheatstone Bridge
6	Resistivity of various Materials	14	Meter Bridge
7	Temperature Dependence of Resistivity	15	Potentiometer
8	Electrical Energy, Power		
<b>12</b>	<b>Magnetic Field Due to Electric Current</b>		
1	Magnetic Force	6	Ampere's Circuital Law
2	Motion in a Magnetic Field	7	The Solenoid and the Toroid
3	Motion in Combined Electric and Magnetic Fields	8	Force between two parallel currents, the Ampere
4	Magnetic Field due to a current element, Biot-Savart Law	9	Torque on Current Loop, Magnetic Dipole

	5	Magnetic Field on the Axis of a Circular Current Loop	10	The Moving Coil Galvanometer
13	<b>Magnets and Earth's Magnetism</b>			
	1	Introduction	5	Magnetisation and Magnetic Intensity
	2	The Bar Magnet	6	Magnetic Properties of Materials
	3	Magnetism and Gauss's Law	7	Permanent Magnets and Electromagnets
	4	The Earth's magnetism		
14	<b>Electromagnetic Induction and Alternating Current</b>			
	1	The Experiments of Faraday and Henry	10	AC Voltage Applied to a Resistor
	2	Magnetic Flux	11	Representation of AC Current and Voltage by Rotating Vectors- Phasors
	3	Faraday's Law of Induction	12	AC Voltage applied to an Inductor
	4	Lenz's Law and Conservation of Energy	13	AC voltage applied to a capacitor
	5	Motional electromotive Force	14	AC Voltage applied to a series LCR circuit
	6	Energy Consideration: A Quantitative Study	15	Power in AC Circuit: The Power Factor
	7	Eddy Currents	16	LC Oscillations
	8	Inductance	17	Transformers
	9	AC Generator		
15	<b>Electromagnetic Waves</b>			
	1	Introduction	3	Electromagnetic Current
	2	Displacement Current	4	Electromagnetic Spectrum
16	<b>Waves Optics and Ray Optics</b>			
	1	Reflection of Light by Spherical Mirrors	7	Some Natural Phenomena due to Sunlight
	2	Refraction	8	Optical Instruments
	3	Total Internal Reflection	9	Huygens Principle
	4	Refraction at Spherical Surfaces and by Lenses	10	Refraction & Reflection of plane waves using Huygens Principle
	5	Refraction through a Prism	11	Coherent and Incoherent Addition of Waves
	6	Dispersion by a Prism	12	Interference of Light Waves & Young's Experiment
17	<b>Diffraction and Polarisation</b>			
		Diffraction		
		Polarisation		
18	<b>Dual Nature of Matter and Radiation</b>			
	1	Introduction	6	Einstein's Photoelectric equation: Energy Quantum of Radiation
	2	Electron Emission	7	Particle Nature of Light: The Photon
	3	Photoelectric Effect	8	Wave Nature of Matter
	4	Experimental Study of Photoelectric Effect	9	Davisson and Germer Experiment
	5	Photoelectric Effect & Wave Theory of Light		
19	<b>Atoms</b>			
	1	Alpha-particle Scattering & Rutherford's Nuclear Model of Atom	4	The Line spectra of the Hydrogen Atom
	2	Atomic Spectra	5	De Broglie's Explanation of Bohr's Second Postulate of Quantisation
	3	Bohr Model of the Hydrogen Atom		
20	<b>Conductors, Insulator and Semiconductor</b>			
	1	Classification of Metals, conductors & Semiconductors	5	Semiconductor diode
	2	Intrinsic Semiconductor	6	Application of Junction Diode as a Rectifier
	3	Extrinsic Semiconductor	7	Digital Electronics and Logic Gates
	4	p-n Junction	8	Integrated Circuits



## CHEMISTRY

1. Some Basic concept of chemistry, mole concept. Nature of metal, non metal. Metalized salt.
2. **Atomic structure**
  - Classical** - Discovery of  $e^-$ ,  $p^+$ ,  $n^0$   
Discovery of nucleus  
Bohr's, Bury electronic.  
Atomic model  
Rutherford, Bohr's, Sommerfeld
  - Modern** - De-Broglie Principle  
Heisenberg Principle  
Quantum Number.  
Pauli's, Hund's, Aufbau's
3. **Radio Activity** -  $\alpha, \beta, \gamma$ , rays
  - Soddy Fajans Russell (Group Displacement Law)
  - Half life disintegration constant
4. **Acid Base salt** - Type of acid, base and salt
5. **Periodic Table** -
  1. Classification
  2. Periodic properties
6. **Chemical Bonding** - Valency & type of Bonding  
Lewis dot structure
7. **Oxidation and Reduction** -
  1. Oxidation Number.
  2. Ion Electron Method
  3. Electrode Potential
8. **Carbon & It's comp** -
  1. Allotrope
  2. Hydrocarbons
  3. Isomerism
9. **Glass & Cement** - Method & Properties
10. **Chemistry everyday life** - Medicine & Detergents

## Biology

1. **Structural organization of cell.**
  - CELL ORGANELS**
    - Discovery of Cell
    - Cell Theory
    - Difference between prokaryotic cell and Eucaryotic cell
    - Endoplasmic Reticulum (ER)
    - Golgi apparatus
    - Lysosome etc.
    - Nucleus – chromosome
2. **Balance Diet :**  
Carbohydrate, fat protein, minerals vitamin water.
3. **Vascular System : Blood, Blood corpusel.**
  - Plasma : Difference between Lymph and Blood.
  - Blood groupings : Antibodies, Human Heart and its function
4. **Endocrine System.**  
All Glands(Pituitary Gland, Oxytocin. Thyroid Gland, Parathyroid Glands, Thymus Gland , Pancreas, Adrenal Glands, Gonods, Testes, Ovary
5. **Reproductive Systems**
  - Types of reproduction
  - Secondary sex organ
  - Menstrual cycle.

- Estrous cycle.
  - Amniocentesis
6. **Nervous System**
- C.N.S.
  - P.N.S. → Cranial Nerve → Spinal Nerve
  - Sensory Organ
  - Ear
7. **Excretory System**
- Nitrogenous waste Products.
  - Excretory System of mammals
8. **Respiratory System**
- Types of Respiration
  - Respiratory organ
  - Structure of Lungs
9. **Skeleton System.**
- Exoskeleton
  - Endoskeleton (Human)
  - Joints
  - Muscular System
10. **Human Disease.**
- |                     |                           |
|---------------------|---------------------------|
| Bacterial Diseases. | Protozoan Disease.        |
| Viral Disease.      | <u>Helminthic Disease</u> |
| Fungal Disease      |                           |

## DEFENCE(CURRENT AFFAIRS)SYLLABUS

<b>1.</b>	Introduction and Terminologies
<b>2.</b>	History of Indian Military
<b>3.</b>	Indian Army <ul style="list-style-type: none"> <li>➤ Organizational Setup example Structure, Regiments etc.</li> <li>➤ Imported and Indigenous weapons and their mechanism.</li> </ul>
<b>4.</b>	Indian Navy <ul style="list-style-type: none"> <li>➤ Organizational Setup example Structure, Fleets etc.</li> <li>➤ Imported and Indigenous Ship, Submarines etc. and their mechanism.</li> </ul>
<b>5.</b>	Indian Air Force <ul style="list-style-type: none"> <li>➤ Organizational Setup example Structure, Wings etc.</li> <li>➤ Imported and Indigenous Air Crafts etc. and their mechanism.</li> </ul>
<b>6.</b>	Paramilitary Forces and Indian Coast Guard.
<b>7.</b>	Central Armed Police Force
<b>8.</b>	Exercises and Operations <ul style="list-style-type: none"> <li>➤ Domestic</li> <li>➤ International</li> </ul>
<b>9.</b>	Commands and Training Centers
<b>10.</b>	Missiles and MTCR
<b>11.</b>	Miscellaneous <ul style="list-style-type: none"> <li>➤ Awards</li> <li>➤ Defence Ministry and Home Ministry.</li> <li>➤ Coordinated Institutions like DRDO, BRO etc.</li> <li>➤ AFSPA</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Questions</li> </ul>