Shiv Chhatrapati Shikshan Sanstha's

SANT TUKARAM NATIONAL MODEL JUNIOR COLLEGE, LATUR

(Affiliated to Central Board of Secondary Education, New Delhi. Affiliation No. - 1130272)

PCB SCREENING TEST SYLLABUS 2025

05-12-2024

Section 'A' (80 Marks)

I) English (20 Marks)

Sr.No.	Syllabus	Weightage	No. of Questions	Total Marks
1	Tenses	4	1	1 x 4 = 4
2	Subject – Verb Concord	4	1	1 x 4 = 4
3	Determiners	4	1	1 x 4 = 4
4	Reported Speech	4	1	1 x 4 = 4
5	Degrees Of Comparison	4	1	1 x 4 = 4

II) Mental Ability (20 Marks)

Sr.No.	Syllabus	Weightage	No. of Questions	Total Marks
1	Number Series	4	1	1 x 4 = 4
2	Coding & Decoding	4	1	1 x 4 = 4
3	Blood Relations	4	1	1 x 4 = 4
4	Day & Date	4	1	1 x 4 = 4
5	Directions	4	1	1 x 4 = 4

III) Basic Mathematics (40 Marks)

Sr.No.	Syllabus	Weightage	No. of Questions	Total Marks
1	Algebric Identities	8	2	2 x 4 = 8
2	Introduction to Trignometry	8	2	2 x 4 = 8
3	Logarithms i) Defination ii) Properties of Logarithms	8	2	2 x 4 = 8
4	Speed, Time & Work	8	2	2 x 4 = 8
5	Mensuration	8	2	2 x 4 = 8

Section 'B' (160 Marks)

Physics

Sr.No.	Syllabus	Weightage	No. of Questions	Total Marks
1	**Motion**	20	5	5 x 4 = 20
	Distance and displacement			
	Uniform and non-uniform motion along a straight line			
	Speed, Velocity & acceleration			
	Distance-time and velocity-time graphs for uniform motion and uniformly accelerated motion			
	Elementary idea of uniform circular motion.			
2	**Force And Laws Of Motion**	16	4	4 x 4 = 16
	Force And Motion			
	Balanced And Unbalanced Forces			
	Types Of Inertia			
	Newton's Laws Of Motion			
	Principle Of Conservation of momentum			
	Force and Acceleration			
3	**Gravitation**	20	5	5 x 4 = 20
	Universal Law Of Gravitation			
	Acceleration Due To Gravity			
	Mass And Weight			
	Free Fall			
	Thrust and Pressure			
	Archimedes' Principle			
	Buoyancy.			
4	**Work & Energy**	16	4	4 x 4 = 16
	Work done by a Force, Method To Calculate Work			
	Kinetic Energy & Potential Energy			
	Power & Energy			
	Law of conservation of energy			
5	**Sound**	16	4	4 x 4 = 16
	Nature of sound and its propagation in various media			
	Speed of sound			
	Characteristics of sound			
	Range of hearing in humans;			
	Ultrasound, reflection of sound & echo.			

6	**Electricity**	20	5	5 x 4 = 20
	Electric current			
	Potential difference and electric current			
	Ohm's law			
	Resistance, Resistivity & Factors on which the resistance of a conductor depends			
	Series combination of resistors, parallel combination of resistors and its applications in daily life			
	Heating effect of electric current and its applications in daily life			
	Electric power, Interrelation between P, V, I and R			
7	**Magnetic Effect of Current**	16	4	4 x 4 = 16
	Magnetic field, field lines			
	Field due to a current carrying conductor			
	Field due to current carrying coil or solenoid			
	Force on current carrying conductor			
	Fleming's Left Hand Rule			
	Domestic electric circuits			
8	**Light And Optical Instrument**	20	5	5 x 4 = 20
	Reflection of light by curved surfaces			
	Images formed by spherical mirrors			
	Centre of curvature, principal axis, principal focus, focal length			
	Mirror formula & magnification			
	Refraction; Laws of refraction, refractive index			
	Refraction of light by spherical lens			
	Image formed by spherical lenses			
	Lens formula & Magnification			
	Power of a lens			
9	**Human Eye & The Colourful World**	16	4	4 x 4 = 16
	Functioning of a lens in human eye			
	Defects of vision and their corrections			
	Applications of spherical mirrors and lenses			
	Refraction of light through a prism			
	Dispersion of light			
	Scattering of light & applications in daily life			

Section 'C' (160 Marks)

Chemistry

Sr.No.	Syllabus	Weightage	No. of Questions	Total Marks
1	**Pollution Of Air and Water**	8	2	2 x 4 = 8
	Air Pollution			
	Green House Effect			
	Water Pollution			
	Soil Pollution			
	Prevention And Control of Pollution			
2	**Inside The Atom**	8	2	2 x 4 = 8
	Types Of Substances			
	Dalton Theory, Various Atomic Models			
	Bohr's Atomic Model			
	Sub-Atomic Particles			
	Atomic Number, Mass Number, Isotopes, Isobars			
	Electronic Configuration of Elements			
	Nuclear Reactor			
3	**Composition Of Matter**	8	2	2 x 4 = 8
	Characteristics Of States of Matter			
	Types Of Elements, Types of Compounds, Types of Mixture			
	Types Of Solutions- True and Colloidal Solution, Cross Rule for Writing Formulae			
4	**Metals And Non-Metals**	24	6	6 x 4 = 24
	Physical And Chemical Properties of Metals			
	Physical And Chemical Properties of Nonmetals			
	Various Concepts of Metallurgy			
	Reactivity Series of Metals			
	Ionic Compounds			
	Corrosion and its prevention.			
5	**Chemical Change and Chemical Bond**	8	2	2 x 4 = 8
	Natural Chemical Changes			
	Chemical Bond			
	Ionic Bond, Covalent Bond			
6	**Study Of Gas Law**	8	2	2 x 4 = 8
	Properties Of Gases, Liquids and Solids			
	Absolute Zero, Standard Temperature Scale			
	Pressure, N.T.P. And S.T.P.			
7	**Measurement Of Matter**	8	2	2 x 4 = 8
	Laws of Chemical Combination			
	Atom - Shape, Mass, Valency			
	Molecular Mass, Atomic Mass, Formula Mass			
	Radicals, Ions			

8	**Acids Bases and Salts**	24	6	6 x 4 = 24
	Introduction			
	Indicator and its types			
	Effects of Acid and Bases on Litmus Paper			
	Arrhenius Theory of Acids and Bases			
	Concentration of an Acid or a Base			
	PH of Solution			
	PH of an Acid and a Base			
	Salts, Types of Salts, Hydrolysis, Degree of Hydrolysis			
9	**Carbon and its compounds**	24	6	6 x 4 = 24
	Carbon Occurrence, Properties and Allotropes			
	Hydrocarbons			
	Valency, Catenation of Carbon Formation of Double and Triple Bond			
	Isomerism Including Single, Double and Triple Bond			
	Homologous Series of Alkane, Alkene, Alkyne and Relation with Molecular mass.			
	Nomenclature of Simple Compounds Having Functional Groups including Double Bond and Triple Bond			
	Hydrocarbon, Method of Preparation, Chemical Properties and Uses of Alkane, Alkene and Alkyne.			
	Preparation, Properties (Physical and Chemical)and Uses of Alcohol (Ethanol) And Carboxylic Acid (Acetic Acid)			
10	**Substances In Common Use**	16	4	4 x 4 = 16
	Important Salts in Day-to-Day Life-NaCl, NaHCO3, CaOCl2, Na2CO3, Soap			
	Radioactive Substances			
	Some Chemical Substances in Day-to-Day Life			
	Food Colors & Essence			
	Dyes, Artificial Colours,			
	Deodorants, Teflon			
	Powder Coating, Anodizing			
	Ceramics, Porcelain, Bone China			
11	**Chemical Reactions and Equations**	24	6	6 x 4 = 24
	Chemical Reactions			
	Balancing A Chemical Equation			
	Rules of Writing Chemical Reaction			
	Types of Chemical Reaction			

Section 'D' (320 Marks)

Biology

Sr.No.	Syllabus	Weightage	No. of Questions	Total Marks
1	**Fundamental Unit Of Life**	40	10	10 x 4 = 40
	What Are Living Organism?			
	What Is Cell Made Up?			
	Structure And Difference Between Animal And Plant Cell.			
	Cell Theory.			
	Plasma Membrane And Cell Membrane.			
	Cell Wall, Nucleus, Cytoplasm, Cell Organelles, Endoplasmic Reticulum. (Er), Golgi Apparatus,Lysosomes, Mitochondria, Plastid, Vacuoles.			
	Prokaryotic eukaryotic cell			
2	**Cell Cycle And Cell Division**	20	5	5 x 4 = 20
	Cell Cycles Phases In Brief.			
	Mitosis And Its Phases			
	Meiosis And Its Phases			
	Significance,			
3	**Tissue**	48	12	12 x 4 = 48
	Animal Tissue			
	Types Of Epithelial Tissue, Connective Tissue and its types, Muscular Tissue and its types,			
	Nervous Tissue.			
	Plant Tissue			
	Meristematic Tissue, Permanent Tissue, Types Of Simple And Complex Tissues.			
4	**Life Processes In Living Organism**	72	18	18 x 4 = 72
	Transportation In Plants-			
	Transportation Of Water , Food And Other Substances,			
	Transportation In Animals-			
	Structure and working of human heart			
	Blood vessels, Blood, Lymph			
	Double circulation			
	Blood pressure			
	Respiration : Aerobic And anaerobic Respiration			
	Energy From Different Food Components.			
	Nutrition - In Plants And Animals, Modes of nutrition			
	Photosynthesis, Experiments to study factors affecting photosynthesis			
	Nutrition -Animals different types			

	Nutrition in human, Dental caries			
	Excretion In Plants And Human Beings, Dialysis.			
	Coordination-			
	Co-Ordination In Plants And Human.			
	Nervous Control - Types Of Neurons, Human Nervous System			
	Reflex Action,			
	Chemical-Control and co ordination in plants and animals			
	Important hormones in plants and animals			
	Movements in plants			
	Reproduction			
	Asexual Reproduction- Binary Fission, Multiple Fission, Budding, Fragmentation, Regeneration, Vegetative Propagation, Spore Formation,Tissue culture.			
	Sexual Reproduction- Gametes Formation, Fertilisation,			
	Sexual Reproduction In Plants.			
	Sexual Reproduction In Human Being- Male And Female Reproductive System, Menstrual Cycle, Gametes Formation, Fertilisation,			
	Reproductive Health			
	Plant Growth, Structure Of Seed, Type Of Germination, Germination of Seed.			
	Pollination- Self Pollination , Cross Pollination, Agents of Pollination.			
5	**Heredity And Variation**	44	11	11 x 4 = 44
	Inheritance - Heredity, Hereditary Changes.			
	Important Terms To Understand Mendel's Work			
	Genes , Alleles , Homozygous , Recessive, Dominant, Mendels Crossing Technique .			
	Mendels Laws Of Inheritance			
	Law Of Dominance , Law Of Segregation, Law Of Independent Assortment , Back Cross, Test Cross, Multiple Alleles -Abo Blood Group,			
	How traits get expressed?			
	Sex determination.			
6	**Health And Disease / Why Do We Fall Ill ?**	28	7	7 x 4 = 28
	Health, Immunity			
	Disease And Its Causes-Acute And Chronic Disease, Causes Of Disease,			
	Infectious And Non Infectious Diseases			
	Disease Causing Agents, Means Of Spread			

	Treatment And Prevention (T.B., Typhoid, Hepatitis, Rabies, Polio, Aids, diarrhoea.)			
7	**Energy Flow In An Ecosystem**	28	7	7 x 4 = 28
	Food Chain And Food Web,			
	Energy Pyramid.			
	Energy Flow and Its Importance.			
	Producers Consumers And Decomposer.			
8	**Environmental Management**	12	3	3 x 4 = 12
	Solid Waste Management-Biodegradable Waste, Non Biodegradable			
	Waste, Necessity Of Solid Waste Management,			
	Seven Principles Of Solid Waste			
	Management, Period Required For Degradation Of Waste.			
9	**Improvement in food resources**	28	7	7 x 4 = 28
	Significance, Crop variety improvement, Crop Protection Management, Crop Protection Management.			
	Animal husbandry Practices: Cattle farming, Poultry Farming, Fish Farming, Apiculture			