Syllabus for written examination for A.L.M, Advt. No. 13/2024 (Category NO. 1 & 2)

1) General awareness, Reasoning, Mathematics, Science, History including Haryana related history, current affairs, literature, Geography, Civics, Environment, Culture etc.- (**Weightage 20%)**

2) Computer terminology, Fundamentals, word software, excel software, Power point, internet, web browsing, Communication, emails, downloading and uploading data on websites etc**. -**

(Weightage 10%)

3) Subject related syllabus- (Weightage 70%)

Occupational Safety & Health:

Safety rules and safety signs for Danger, Warning, caution & personal safety messages. Basic injury prevention, Basic first aid, Hazard identification, avoidance and PPEs. Personal safety and factory safety. Effects of electric current on human being. Reasons for shock. Disposal procedure of waste materials. Response to emergencies e.g., power failure, fire, and system failure. Concept of Standards and advantages of BIS/ISI. Familiarization with signs and symbols of electrical accessories Introduction to 5S concept. Introduction to fitting tools, safety precautions. Description of files, hammers, chisels hacksaw frames, blades, their specification and grades. Marking tools description and use. Types of drills, description & drilling machines. Various wooden joints. Marking tools; callipers Dividers, Surface plates, angle plates, scribers, punches, surface gauges, Types, Uses, Care and maintenance. Sheet metal tools: Description of marking & cutting tools. Types of rivets and riveted joints. Use of thread gauge. Description of carpenter's tools Care and maintenance of tools.

Wire Joints:

Trade tools specifications, Properties of conductors, Fundamental of electricity. Electron theory; free electron, fundamental terms, definitions, units & effects of electric current. Types of wires & cables, standard wire gauge, Current carrying capacity of different conductors. Specification of wires & Cables, insulation & voltage grades -Low, medium & high voltage Precautions in using various types of cables / Ferrules. Types of Wire joints & their application. Insulators, semi-conductors and resistors. Voltage grading of different types of Insulators, permissible temperature rise. Solders, flux and soldering techniques.

Basic Electricity:

Introduction of National Electrical Code 2011. Ohm's Law, Kirchhoff's Laws Series and parallel circuits. Open and short circuits in series and parallel networks. Laws of Resistance and various types of resistors. Series and parallel combinations of resistors. Wheatstone bridge; principle and its applications. Different methods of measuring the values of resistance

Magnetism:

Magnetic terms, magnetic materials and properties of magnet. Principles and laws of electro-magnetism,Self and mutually induced EMFs

Electrostatics:

Capacitor, Different types, functions, grouping and uses. Inductive and capacitive reactance, their effect on AC circuit and related vector concepts. Comparison and Advantages of DC and AC systems. Related terms frequency, Instantaneous value, R.M.S. value, Average value, Peak factor, form factor, power factor and Impedance etc. Sine wave, phase and phase difference. Active and Reactive power. Single Phase and three-phase system. Advantages of AC poly-phase system. Problems on A.C. circuits. Concept of three-phase Star and Delta connection. Line and phase voltage, current and power in a 3 phase circuits with balanced and unbalanced load.

Measuring instruments:

Classification of electrical instruments and essential forces required in indicating instruments. PMMC and Moving iron instruments, Measurement of various electrical parameters using different analog and digital instruments viz., multi-meter, Wattmeter, Energy meter, Phase sequence meter, Frequency meter, etc. Measurement of energy in three phase circuit. Important common applicable IE rules

Meter Reading:

Description of MRI - Reading of Meter by MRI

Power system:

Generation, transmission and distribution of electrical power General idea about overhead transmission, distribution (LV, MV & HV) and their types and accessories used. Types of Distribution system Line protecting devices Types of substations - indoor, outdoor & Pole mounted, etc.

Substation Equipment Switchgear:

CBs – ACB, VCB, SF6, OCB etc. protection schemes, current transformer, Potential transformer, Protective relays, lightning arrestors, Different types of switches and switch gears, multi-Range switches, rotary switches, cooker control panels, power circuit switches, thermostat, mercury switches etc.

Earthing:

Importance of Earthing. I. E. Rules for earthing conduits using earth clips and earth wire as per IS 732-1863. Plate earthing, pipe earthing grid/mesh earthing. Earth resistance, earth leakage current and circuit breaker. Difference between grounding and earthing. Awareness of circuit main earth (CME) and portable earth.

Transformers, AC motors, starters and Alternators:

Working principle, construction and classification of transformers. Single phase and three phase transformers. Testing of transformers. General concept of rotating electrical machines. Principle of operation of AC motors and generators, components and various types.

Motor Starters:

Different types of starters for AC motors, its necessity, basic contactor circuit, parts and their functions. Basic knowledge of soft starter, Different control elements and equipment, their symbols. Power and control schematic drawings with interlocks. Relay ladder logic. Relay and control panel wiring. Circuits of various electrical appliances and controls. Power Distribution network drawing.

Domestic Wiring:

Introduction and explanation of electrical wiring systems, cleat wiring, Casing-capping, CTS, Conduit and concealed etc. IE Rules related to wiring, National Building codes for house wiring, specification and types, rating & material. Minimum load capacities (W/m2) of various buildings. Electrical load categories. Terms; Maximum demand, Load factor and Diversity factor, etc. Various wiring accessories/ electrical fittings e.g. switches, fuses, lamp holders, plugs, brackets, ceiling rose, cut out relays, sensors, voltage regulators, MCB, ELCB, MCCB etc. Grading of cables and current ratings. Principle of laying out of domestic wiring. Selection of switchgear. Voltage drop concept. IS 732-1863. Wiring materials used for PVC cables, Indian standards regarding the above wiring such as clip distance fixing of screws, cable bending etc. Introduction to estimation procedure, PVC casing and capping materials, sizes and grades etc. Conduit pipe wiring materials and accessories, types and sizes of conduit. Branching of circuits with respect to loads such as lighting and power. Layout of Light points, fan points, heating loads etc., their controls, main switches, distribution boards as per IE rules. Difference between MCCB, MCB, ELCB, RCCB, MPCB. Different types of wiring; PVC conduit; Surface and concealed (PVC Conduit;/ metal conduit) Casing-capping wiring system. Power, control, Communication and entertainment wiring. Wiring circuits planning, permissible load in sub-circuit and main circuit.

Control Panel Wiring:

Control panel components; DIN rails, trunking, connector blocks, screw terminals, relays, contactors, protective units, fuses, fuse holders; chassis mounted, fuse-links, resistors; fixed, variable, capacitors, switches, lamps, labelling grommets and clips etc. Cable forming; template, wiring schedule, run out sheet, binding, continuous lacing, loop tie, lock stitch, finish knot, breakouts, lacing breakouts, spot ties, laying of wires, twisted pair, Cable markers and colour codes etc. Connections and routing of cables. Consideration of EMI/EMC Conductors of different circuits. Symbols and use of relay contacts: NO, NC, changeover, make/break after delay. Testing of various control elements and circuits.

Battery and solar cell:

Chemical effects of electric current and Laws of electrolysis. Explanation of Anodes and cathodes. Types of cells, advantages/ disadvantages and their applications. Lead acid cell; Principle of operation and components. Types of battery charging, Safety precautions, test equipment and maintenance. Grouping of

cells for specified voltage and current. Principle and operation of solar cell, Types of solar cell,Solar energy fundamentals. Study of Sun path (east to west, North to south and south to north movement). Study of daily and seasonal changes of sunlight. Angle of inclination of radiant light and its relation with latitude and longitude of different locations on Earth. Solar DC domestic application: Making of solar lantern. Solar Day lighting. Solar Garden Lights. Safety in DC system. Quality standards List out the inventory list of equipment's. Solar DC industrial application: Solar Street light. Solar home lighting system. Solar Security system. Solar DC water pump. Differentiate AC and DC solar pumps and their PV requirements for various HP capacities. Solar PV e-learning software.

Workshop Calculation & Science:

Unit, Fractions Classification of unit system Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units Measurement units and conversion Factors, HCF, LCM, Applications of Pythagoras theorem and related problems Ratio and proportion Ratio and proportion - Direct and indirect proportions Percentage - Changing percentage to decimal and fraction, Mass, Weight, Volume and Density Mass, Related problems, Work, power, energy, HP, IHP, BHP and efficiency Potential energy, kinetic energy, Heat & Temperature and Pressure Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point, Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature Heat &Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation. Mensuration Area and perimeter of square, rectangle, Triangles, circle, semi-circle, circular ring, sector of circle, volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder.

Industrial Wiring:

Adverse conditions likely to affect the installation. Degree of mechanical and electrical protection necessary. Peak-Non-peak Loads in Office Buildings Lighting Design; lighting power density, Estimation of load, cable size, bill of material and cost. Inspection and testing of wiring installations. Special wiring circuit e.g. hospital, go down, tunnel and workshop, etc. Danger notice as per IE rules.

Cable Management:

Types of cables, their use, Various cable gland s Introduction to IP ratings (Ingress protection) and IP Codes format. Importance of Bonding and grounding, various types. Testing of cables, locating faults, open circuit, short circuit and leakage in cables.

Illumination & Stage Light Control:

Laws of Illuminations. Types of illumination system. Illumination factors, intensity of light. Type of lamps, advantages/ disadvantages and their applications. Calculations of lumens and efficiency. Spotlights, downlights, Strip lights Various reflectors; PAR (Parabolic aluminized reflector), MR (Multi-faceted reflector) LED video wall panel applications

CFL/LED Lamps & DC regulated power supply:

Resistors; colour code, types and characteristics. Diode; P-N junction, classification, specifications, biasing and characteristics. Rectifier circuit; half wave, full wave, bridge rectifiers and filters. Active and passive components. Functioning of components used in CFL and LED circuits. CFL and LED lamp's circuit. Safety and disposal procedure.

Underground cable joints:

Need of cables, advantages and disadvantages, various types viz., PVC, XLPE, PILC, oil filled, etc. Cable insulation & voltage grades. Joints and terminations; pre-moulded, heat shrinkable, extrusion moulded joints Slip on, cold shrink terminations. Types of connectors used in the cable, current path. Methods of conductor connection, contact resistance. Galvanic corrosion and use of bimetals. Connectivity for cable screen and armour, mechanical protection Kits for joints and terminations. Cable termination to equipment Standards and testing; type, routine, field test, Stress control.

Domestic appliances:

Working principles and circuits of common domestic electrical appliances; Bell, buzzer, electric iron, kettle, cooking range, geyser, induction heater, mixer, grinder, juicer, food processor, fan, pump set, washing machine, refrigerator and air conditioner etc. Concept of Neutral and Earth.

Winding:

Concentric/ distributed, single/ double layer winding and related terms. Troubleshooting of single-phase, AC induction motors and universal motor, Concept and Principles of estimation and costing. Different wiring layouts and Bill of material; domestic, commercial, and industrial wiring. Smart wiring concept Procedure for taking wireman permit and competency certificate.

Important Note: The Weightage as mentioned against the syllabus is tentative & may vary.

Syllabus for written examination for Deputy Ranger, Advt. No. 13/2024 (Category No. 3)

1) General awareness, Reasoning, Mathematics, Science, History including Haryana related history, current affairs, literature, Geography, Civics, Environment, Culture etc.- **(Weightage 20%)**

2) Computer terminology, Fundamentals, word software, excel software, Power point, internet, web browsing, Communication, emails, downloading and uploading data on websites etc**. -**
(Weightage 10%)

3) Subject related syllabus- **(Weightage 70%)**

Agriculture:

Introduction to Agriculture, Principles of Agronomy, Fundamentals of Soil Science, Fundamentals of Entomology, Economic Botany, Principles of Horticulture, Biomathematics.

Crop Production, Soil Chemistry, Principles of Insect Control, Plant Pathology, Agricultural Meteorology, Livestock and Poultry Production, Basics of Agricultural Engineering.

Principles of Genetics, Water Management, Pests and Pest Control, Diseases of Field Crop, Production of Technology of Food Crops, Dairy Cattle and Buffalo, Organic Farming and Sustainable Agriculture, Plant Nutrition, Manures, and Fertilizers.

Plant Breeding, Agricultural Statistics, Weed Management, Green House Technology, Agricultural Microbiology, Seed production Technology, Post-Harvest Technology.

Physics:

Electromagnetic waves: Basic Idea of displacement current, Electromagnetic waves, Sources, and Characteristics of EMW, Transverse Nature of EMW (qualitative Ideas only) Electromagnetic Spectrum, (Radio waves, Microwaves, infrared visible, ultraviolet, X-rays, gamma rays). including elementary facts about their uses.

Ray optics and optical instruments: Ray optics: Reflection of light by spherical mirrors, Mirror formula, refraction of light, lateral shift of a ray refraction through a glass slab, real and apparent depth, Advance Sunrise and delayed sun set due to atmospheric refraction, Total internal reflection, and its applications, Optical fibre, Mirage, totally reflecting prism, Brilliancy of diamond, Refraction at convex spherical surfaces. Lenses, Refraction by a lens, Power of a lens, Combination of thin lenses and mirror in contact, lens formula lens maker's formula. Refraction and Dispersion of light through a prism, pattering of light- blue colour of sky and reddish appear of the sun at sunrise and sunset. Some Natural phenomena due to sunlight- The rainbow. Optical instruments: - Microscopes and Astronomical telescopes (reflecting and refracting) and their magnifying powers.

Wave optics: Wave front and Huygens's principle, refraction and reflection of plane waves at a plane surface using Huygens principle. Proof of law of reflection and refraction using Huygens's principle. Interference of light waves. Young's double slit experiment and expression for fringe width, Coherent Sources and sustained Interference of light. Diffraction, Diffraction due to a Single Slit width of Central maxima, resolving power of microscopes and telescopes. Polarisation, plane polarised light. Brewster's law, Uses of plane Polarised light & polaroid.

Atoms: Alpha- particle Scattering experiment. Rutherford's Model of atom, Drawbacks of Rutherford's Model. Bohr's Model of hydrogen atom- postulates, Bohr radius, Total Energy of electron in nth orbit. Energy levels of hydrogen atom The line spectra of hydrogen atom.

Nuclei: Atomic masses & composition of Nucleus, Size of nucleus isotopes, isobars isotones Mass energy relation, Nuclear Binding Energy and Mass Defect. Binding Energy and Mass Defect. Binding Energy Curve, Radioactivity. Law of radioactive decay, Alpha, Beta & Gamma particles/rays and their properties, nuclear fission and fusion.

Semiconductor Electronics, Materials, Devices & Simple Circuits: Energy bands in Conductors, Semiconductor & Insulators (Qualitative Ideas only). Intrinsic & Extrinsic Semiconductor, Semiconductor diode-I-V Characteristics in Forward and reverse bias. Diode as full wave & half wave rectifier Special purpose p-n junction diodes- Zener Diode and their Characteristics, Zener Diode as a Voltage regulator, LED, Photodiode, Solar Cell Junction Transistor, Transistor Action, Characteristics of a transistor , transistor as an amplifier(C.E. Configuration) basic Idea of analog & digital signal, logic gates(OR,AND,NOT, NAND, NOR).

Chemistry:

Solution: Types of solutions, expression of concentration of solution of solid in liquids, solubility of gases in liquids, (Henry's law) solid solutions, colligative properties- relative lowering of vapour pressure, Raoults's law, ideal and non-Ideal solutions, osmotic pressure, osmosis and it's applications, depression of freezing

point, elevation of boiling point, determination of molecular masses using colligative properties, Abnormal molecular masses, Van't Hoff- factor, Van't Hoff equation for colligative properties.

Electrochemistry: Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variation of conductivity with concentration, Kohlrausch's law, electrolysis and laws of electrolysis (only elementary Idea), Electrochemical cell, (construction, representation and working) dry cell- electrolytic cells, lead accumulator, Ni-cd cell, fuel cell, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, reference electrode (NHE) Relation between Gibb's free energy change and EMF of a cell, Electrochemical series and it's applications.

Coordination compounds: Coordination compounds- Introduction, difference between Coordination compounds and double salts, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mono nuclear Coordination compounds, bonding in complex compounds, Werner's theory, VBT and CFT: Structure and stereo isomerism, importance of Coordination compounds (In qualitative inclusion, extraction of metals and biological system).

Haloalkanes and Haloarenes: Haloalkanes: Nomenclature, nature of C-X bond physical and chemical properties, mechanism of substitution reaction, optical rotation. Haloarenes: Nature of C-X bond, substitution reaction (Directive Influence of halogen in monosubstituted compounds only) Uses and environmental effects of – dichloromethane, trichloro methane, tetra chloro-methane, Iodoform, freons, DDT.

Alcohols, Phenols and Ethers: Alcohols: Nomenclature, methods of preparation, physical and chemical properties (Primary alcohols only), Identification of Primary, Secondary and Tertiary alcohols, Mechanism of dehydration of alcohols, uses of alcohol with special reference to ethanol and methanol. Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenol. Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

Aldehydes, Ketones and Carboxylic acids: Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation of aldehyde & ketones, physical and chemical properties and mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes; uses.Carboxylic acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Organic compounds containing Nitrogen: Amines: Nomenclature, classification, structure, methods of preparation, Physical and chemical properties, basic nature of amines. Identification of primary, secondary and tertiary amines and uses of amines. Diazonium salts: Preparation, chemical reaction and importance in synthetic organic chemistry.

Biology:

Diversity of Living Organisms:

The Living World: Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature.

Biological Classification: Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroid's.

Plant Kingdom: Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyte, Gymnospermae (Topics excluded – Angiosperms, Plant Life Cycle and Alternation of Generations)

Animal Kingdom: Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level (salient features and at a few examples of each category). (No live animals or specimen should be displayed.)

Structural Organization in Animals and Plant:

Cell-The Unit of Life Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system, endoplasmic reticulum, Golgi bodies, lysosomes, vacuoles, mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.

Biomolecules Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids; Enzyme - types, properties, enzyme action. (Topics excluded: Nature of Bond Linking Monomers in a Polymer, Dynamic State of Body Constituents – Concept of Metabolism, Metabolic Basis of Living, The Living State)

Cell Cycle and Cell Division: Cell cycle, mitosis, meiosis and their significance

Plant Physiology:

Photosynthesis in Higher Plants: Photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.

Respiration in Plants: Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

Plant - Growth and Development: Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA.

Reproduction:

Sexual Reproduction in Flowering Plants: Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; out breeding devices; pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modes- apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation.

Genetics and Evolution:

Heredity and variation: Mendelian inheritance; deviations from Mentalism – incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy; elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes; Sex determination - in humans, birds and honey bee; linkage and crossing over; sex linked inheritance - haemophilia, colour blindness; Mendelian disorders in humans - thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.

Molecular Basis of Inheritance: Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central Dogma; transcription, genetic code, translation; geneexpression and regulation - lac operon; Genome, Human and rice genome projects; DNA fingerprinting.

Evolution: Origin of life; biological evolution and evidences for biological evolution (palaeontology, comparative anatomy, embryology and molecular evidences); Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution - variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy - Weinberg's principle; adaptive radiation; human evolution.

Ecology and Environment:

Organisms and Populations: Population interactions - mutualism, competition, predation, parasitism; population attributes - growth, birth rate and death rate, age distribution. (Topics excluded: Organism and its Environment, Major Abiotic Factors, Responses to Abiotic Factors, Adaptations)

Ecosystems: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy (Topics excluded: Ecological Succession and Nutrient Cycles)

Biodiversity and its Conservation: Biodiversity-Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.

Important Note: The Weightage as mentioned against the syllabus is tentative & may vary.

Syllabus for written exam for Male Warder & Female Warder, Advt. No. 13/2024 (Cat No. 4 & 5)

1) General awareness, Reasoning, Mathematics, Science, History including Haryana related history, current affairs, literature, Geography, Civics, Environment, Culture etc. - **(Weightage 20%)**

2) Computer terminology, Fundamentals, word software, excel software, Power point, internet, web browsing, Communication, emails, downloading and uploading data on websites etc**.** - **(Weightage 10%)**

3) Subject related syllabus- (Weightage 70%)

A. General Awareness

Questions from the General Awareness section are designed to test the candidate's general knowledge of the environment around him and its applications to society. Questions are also designed to test knowledge of current events and of such matters of everyday observation and experience in their scientific aspect as may be expected of an educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to History, Culture, Geography, Economic Scene, General policy, Static Awareness, and scientific research.

Introduction to Indian Constitution: Preamble, Fundamental duties and fundamentals rights only, Traffic Rules, Traffic signs, Penalties for violating traffic rules, first aid, safety precautions and occupational health, Welfare Schemes run by Government of Haryana and provisions.

FUNDAMENTALS OF INSURANCE: Introduction to insurance, Contract of life insurance, Fire insurance, Marine insurance, Accident and motor insurance, Farm Crop Insurance, Insurance intermediaries – role of agents and procedure for becoming an agent; cancellation of license; revocation/suspension/termination of agent appointment; code of conduct; unfair practices.

B. General Intelligence

This section includes questions of both verbal and non-verbal reasoning. The questions will be asked from:

Semantic Analogy, Symbolic operations, Symbolic/ Number Analogy, Trends, Figural Analogy, Space Orientation, Semantic Classification, Venn Diagrams, Number Series, Embedded figures, Figural Series, Critical Thinking, Problem Solving, Symbolic/ Number Classification, Drawing inferences, Figural Classification, Punched hole/ pattern folding & unfolding, Semantic Series, Figural Pattern-folding and completion, Emotional Intelligence, Word Building, Social Intelligence, Coding and de-coding, Other sub-topics if any Numerical operations,

C. English Language

The English Language questions will be asked from the following topics:

Spot the Error, fill in the Blanks, Synonyms/ Homonyms, Antonyms, Spellings/ Detecting misspelt words, Idioms & Phrases, One-word substitution, Improvement of Sentences, Active/ Passive Voice of Verbs, Conversion into Direct/Indirect narration, Shuffling of Sentence parts, Shuffling of Sentences in a passage, Cloze Passage, Comprehension Passage, English/Hindi words & terminology used in offices and their inter-translation.

D. Quantitative Aptitude

Number Systems: Computation of Whole Number, Decimal and Fractions, Relationship between numbers.

Fundamental arithmetical operations: Percentages, Ratio and Proportion, Square roots, Averages, Interest (Simple and Compound), Profit and Loss, Discount, Partnership Business, Mixture and Allegation, Time and distance, Time and work.

Mensuration: Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular or square Base.

Algebra: Basic algebraic identities of School Algebra and Elementary surds (simple problems) and Graphs of Linear Equations.

Geometry: Familiarity with elementary geometric figures and facts: Triangle and its various kinds of centres, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of a circle, common tangents to two or more circles.

Trigonometry: Trigonometry, Trigonometric ratios, Complementary angles, Height and distances (simple problems only) Standard Identities like $\sin^2\theta + \cos^2\theta = 1$ etc.

Statistical Charts: Use of Tables and Graphs: Histogram, Frequency polygon, Bar-diagram, Pie-chart.

E. HINDI

Hindi Language:

शब्द, अलंकार, विकारी शब्द, वाक्य, अविकारी शब्द, पद, पदबंध, मुहावरें, लोकोक्तियां, संधि, उपसर्ग, प्रत्यय, समास, पर्यायवाची, विलोम व अनेकार्थी शब्द, अयोगवाह, वाक्य सम्बोधन, निपात (अवधारक), विरामचिन्ह, संबंधबोधक, अनेक शब्दों के लिए एक शब्द, एकार्थक शब्द, युग्मशब्द, वर्तनी(शब्द एंव वाक्य शुद्धिकरण), वर्ण, स्वर, व्यंजन, विदेशी ध्वनियाँ, संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, समुच्चय बोधक, विस्मय बोधक, वचन, लिंग, कारक, काल, तदभव–तत्सम शब्द

F. Haryana economy:

nature, characteristics and problems; concept of economic development; State of the Haryana economy since its inception: Income; Population, Health & Nutrition and declining sex ratio, Haryana agriculture: nature, cropping pattern, role of agriculture in Haryana economy, Measures for development in agriculture, crop insurance, Agriculture credit: agriculture finance, types of agriculture finance; credit needs of farmers; sources of credit: institutional and non-institutional sources; NABARD; rural indebtedness: causes, consequences and debt relief measures, Micro, small & medium enterprises (MSME) in Haryana: meaning, role, performance and challenges; SEZ, Growth of MNCs in Haryana, Role of HSIIDC, HFC, HAFED, HKVIB, Haryana budget: objectives and policies, sources of revenues and its utilization.

G. Rural Marketing:

Meaning, nature, characteristics; opportunities and challenges to rural markets in Haryana; Socio-cultural, economic, demographic, technological and other environmental factor affecting rural marketing; rural consumer behaviour; segmentation of rural market; strategies for rural marketing; rural marketing mix; difference in rural and urban market; problems in rural marketing; Strategies for rural marketing, Product planning, pricing, promotion and management of distribution channels for marketing of durables and non-durables in rural areas; Planning and organizing personnel selling in rural markets; Innovation in rural market; E-commerce in rural markets, e-chaupal& other similar initiatives in rural markets.

H. Environmental Studies and Disaster Management

Multidisciplinary nature of environmental studies, Natural Resources, Forest resources, Water resources, Mineral resources, Food resources, Energy resources, Land resources, Ecosystems, Energy flow in the ecosystem, Introduction, types, characteristic features, structure and function of the following ecosystem: a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries). Biodiversity and its conservation, Value of biodiversity, Hot-sports of biodiversity, Threats to biodiversity, Endangered and endemic species of India. Conservation of biodiversity, Environmental Pollution, effects and control measures of: a. Air pollution b. Water pollution c. Soil pollution d. Marine pollution e. Noise pollution f. Thermal pollution g. nuclear hazards. Solid Waste Management, Social Issues and the Environment, Environmental ethics, Wasteland reclamation, Consumerism and waste products. Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act. Issues involved in enforcement of environmental legislation. Public awareness. Human Population and the

Environment, Environment and human health, Role of Information Technology in Environment and human health.

DISASTER MANAGEMENT: Natural Disasters, Climatic change, Man Made Disasters, Disaster Management, International strategy for disaster reduction, national disaster management framework; financial arrangements; role of NGOs, community –based organizations and media. Central, state, district and local administration; Armed forces in disaster response; Disaster response; Police and other organizations.

Important Note: The Weightage as mentioned against the syllabus is tentative & may vary.

Syllabus for written exam for Assistant Superintendent Jail (Male), Advt. No. 13/2024(Cat.No. 6)

1) General awareness, Reasoning, Mathematics, Science, History including Haryana related history, current affairs, literature, Geography, Civics, Environment, Culture etc. -
(Weightage 20%)

2) Computer terminology, Fundamentals, word software, excel software, Power point, internet, web browsing, Communication, emails, downloading and uploading data on websites etc**.** -
(Weightage 10%)

3) Subject related syllabus- (Weightage 70%)

A. General Intelligence &Reasoning:

It would include questions of both verbal and non-verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. The topics are, Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Classification, Symbolic/Number Classification, Figural Classification, Semantic Series, Number Series, Figural Series, Problem Solving, Word Building, Coding & de-coding, Numerical Operations, symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing inferences, Punched hole/ pattern- folding& un-folding, Figural Pattern-folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small & Capital letters/numbers coding, decoding and classification, Embedded Figures, Critical thinking, Emotional Intelligence, Social Intelligence.

B. General Awareness:

Questions in this component will be aimed at testing the candidates' general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and of such matters of every day observations and experience in their scientific aspect as may be expected of any educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining History, Culture, Geography, Economic Scene, General Policy & Scientific Research.

Introduction to Indian Constitution: Preamble, Fundamental duties and fundamentals rights only, Traffic Rules, Traffic signs, Penalties for violating traffic rules, first aid, safety precautions and occupational health, Welfare Schemes run by Government of Haryana and provisions.

C. Quantitative Aptitude:

The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The scope of the test will be computation of whole numbers, decimals, fractions and relationships between numbers, Percentage. Ratio & Proportion, Square roots, Averages, Interest, Profit and Loss, Discount, Partnership Business, Mixture and Alligation, Time and distance, Time & Work, Basic algebraic identities of School Algebra & Elementary surds, Graphs of Linear Equations, Triangle and its various kinds of centres, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of a circle, common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular or square base, Trigonometric ratio, Degree and Radian Measures, Standard Identities, Complementary angles, Heights and Distances, Histogram, Frequency polygon, Bar diagram & Pie chart.

D. Hindi & English Language:

Candidates' ability to understand correct Hindi/English, his/her basic comprehension and writing ability, Hindi & English terms used in offices and inter-translation etc. would be tested.

E: Economics and Governance:

Comptroller & Auditor General of India & Haryana- Constitutional provisions, Role and responsibility.

Finance Commission- Role and functions.

Basic Concept of Economics and introduction to Micro Economics: Definition, scope and nature of Economics, Methods of economic study and Central problems of an economy and Production possibilities curve.

Theory of Demand and Supply: Meaning and determinants of demand, Law of demand and Elasticity of demand, Price, income and cross elasticity; Theory of consumer's behaviour Marshallian approach and Indifference curve approach, Meaning and determinants of supply, Law of supply and Elasticity of Supply

Theory of Production and cost: Meaning and Factors of production; Laws of production- Law of variable proportions and Laws of returns to scale.

Forms of Market and price determination in different markets: Various forms of markets-Perfect Competition, Monopoly, Monopolistic Competition and Oligopoly and Price determination in these markets.

Haryana economy: nature, characteristics and problems; concept of economic development; State of the Haryana economy since its inception: Income; Population, Health & Nutrition and declining sex ratio, Haryana agriculture: nature, cropping pattern, role of agriculture in Haryana economy, Measures for development in agriculture, crop insurance, Agriculture credit: agriculture finance, types of agriculture finance; credit needs of farmers; sources of credit: institutional and non-institutional sources; NABARD; rural indebtedness: causes, consequences and debt relief measures, Micro, small & medium enterprises (MSME) in Haryana: meaning, role, performance and challenges; SEZ, Growth of MNCs in Haryana, Role of HSIIDC, HFC, HAFED, HKVIB, Haryana budget: objectives and policies, sources of revenues and its utilization.

Rural Marketing: meaning, nature, characteristics; opportunities and challenges to rural markets in Haryana; Socio-cultural, economic, demographic, technological and other environmental factor affecting rural marketing; rural consumer behaviour; segmentation of rural market; strategies for rural marketing; rural marketing mix; difference in rural and urban market; problems in rural marketing; Strategies for rural marketing, Product planning, pricing, promotion and management of distribution channels for marketing of durables and non-durables in rural areas; Planning and organizing personnel selling in rural markets; Innovation in rural market; E-commerce in rural markets, e-chaupal& other similar initiatives in rural markets.

FUNDAMENTALS OF INSURANCE: Introduction to insurance, Contract of life insurance, Fire insurance, Marine insurance, Accident and motor insurance, Farm Crop Insurance, Insurance intermediaries – role of agents and procedure for becoming an agent; cancellation of license; revocation/suspension/termination of agent appointment; code of conduct; unfair practices.

F. Environmental Studies and Disaster Management

Multidisciplinary nature of environmental studies, Natural Resources, Forest resources, Water resources, Mineral resources, Food resources, Energy resources, Land resources, Ecosystems, Energy flow in the ecosystem, Introduction, types, characteristic features, structure and function of the following ecosystem: a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries). Biodiversity and its conservation, Value of biodiversity, Hot-sports of biodiversity, Threats to biodiversity, Endangered and endemic species of India. Conservation of biodiversity, Environmental Pollution, effects and control measures of: a. Air pollution b. Water pollution c. Soil pollution d. Marine pollution e. Noise pollution f. Thermal pollution g. nuclear hazards. Solid Waste Management, Social Issues and the Environment, Environmental ethics, Wasteland reclamation, Consumerism and waste products. Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act. Issues involved in enforcement of environmental legislation. Public awareness. Human Population and the Environment, Environment and human health, Role of Information Technology in Environment and human health.

DISASTER MANAGEMENT: Natural Disasters, Climatic change, Man Made Disasters, Disaster Management, International strategy for disaster reduction, national disaster management framework; financial arrangements; role of NGOs, community –based organizations and media. Central, state, district and local administration; Armed forces in disaster response; Disaster response; Police and other organizations.

NOTE- <u>The questions in Parts A, B, D, E & F will be of a level commensurate with the essential qualification viz. Graduation and questions in Part-C will be of 10th standard level.</u>

<u>Important Note: The Weightage as mentioned against the syllabus is tentative & may vary.</u>

Syllabus for written examination for Junior Coach, Advt. No. 13/2024 (Cat No. 7 to 37)

1) General awareness, Reasoning, Mathematics, Science, History including Haryana related history, current affairs, literature, Geography, Civics, Environment, Culture etc.- **(Weightage 20%)**

2) Computer terminology, Fundamentals, word software, excel software, Power point, internet, web browsing, Communication, emails, downloading and uploading data on websites etc**. -**
(Weightage 10%)

3) Subject related syllabus- **(Weightage 70%)**

Foundation of Physical Education

Meaning & definition of physical education, aim and objective of physical education. Scope of physical education, need and importance of physical education in modern society. Relationship of physical education with general education. Leisure and physical education. Place of physical in the present sys tern of education.

National programme of physical education & sports. National institution of physical education & sports - NSNIS Patiala, sports authority of India (SAI), national sports talent contest scheme, army boys sports company scheme, special area scheme, SAI training centre scheme, national coaching scheme, rural sports and national.

History of physical education in India, division of ancient period, British period till 1947. Indian Olympic Association, history, constitution and role of IOA. Organization and State Associations, National Games, Asian Games, SAF Games, Common Wealth Games.

Olympic movement and its impact in physical education and sports. Games and sports as man's cultural heritage, role of games and sports in national and international integration. Sports policy of India and Haryana, Sports awards — Bhima, Arjun award, Rajiv Gandhi Khel Rattan award, Maulana Abul Kalam Azad Trophy, Dhyanchand life time achievement award and Dronacharya Award.

Theory of Games

History of games, Role of Haryana's people for the development of games, Duties of officials (Pre game, during the game & post-game), Technical officials & their duties, Protective equipment used in games, Offensive & defensive strategy employed in the various games, Conduct of tournament & types of fixtures used in various Games/Sports, Duties of Technical Officials, Awards, Major tournaments, Famous Sports Personalities, qualities of good coach, qualities of good officials, Principles of officiating,Principles of coaching, qualifications of a coach/official.

KINESIOLOGY

Meaning of kinesiology brief history of Kinesiology. Importance of kinesiology for games and sports; structural & functional classification of muscles. Role of muscles in Physical activity, anatomical standing position, planes and axes of movement. Terminology of fundamental movement, Newtons laws of motion and their implication in Physical Education and Sports. Levers, Equilibrium, Centre of gravity, force centripetal and centrifugal force; Application of biomechanical principles to sports, Motor movement, rhythm, movement coupling, movement precision and movement amplitude,Upper extremity, shoulder girdle, shoulder joints & elbow joint. Deltoid, Latissimus Dorsi, Pectoralis major, pectoralis minor, Trapezius, Biceps Brachii and Triceps - Lower extremity: Hip joint, Knew joint & Ankle joints, Gluteus Maximums, Gluteus Medius, Gluteus minimum, Hamstring (Group), quadriceps (Groups), Gastrocnemius. - The spinal column, Meaning, importance, aims and objectives of biomechanics in Physical Education and sports; kinetics, speed, velocity, acceleration, projectile, linear, mass, weight, pressure, work energy, momentum, friction, inertia, Meaning of posture type of posture, importance of posture, causes of poor posture, preventive and remedial measures of a poor posture, common postural deformities kyphosis, lordosis, flat foot, knock knees, bow legs, lateral curvatures.

Anatomy & Fitness

Meaning of anatomy, cell, structure, properties of living matter. The role of anatomy in physical education & sports, anatomy of bones cartilage's, Names and location and functions of bones, kinds of bones, joints end their types, tissues, organs and system of body, Anatomy of muscular system, structure of muscles and their kinds. Properties of muscles. Muscle work and, fatigue, anatomy of respiratory organs, tissue and palmaryrespiration, anatomy of heart, function of heart, heartbeat, stroke volume, cardiac output, Anatomy of digestive organs (alimentary canal), structure and functions of excretory system, meaning of endocrine glands, Definition of physical fitness components of physical fitness, benefits of physical - activity, development of physical fitness. Controlling and management of your weight, determining the right weight to you, factors influencing physical fitness. Planning a fitness programme, identify your fitness

goals. Design your programme, causes and prevention of fitness related injuries, selecting a nutrition plan for fitness.

ENVIRONMENT STUDIES

Solar System: - Sun, major planets and their satellites. Water cycle, wind, ice, ecosystem, components of ecosystem. Ecological succession, whether modification, noise pollution, Epidemiology – meaning and its types, food born and water borne diseases, food related health problems other than biological agents. Air born infection caused by pollution other than micro-organism, insecticide, Uses of water, water sanitation, sources of water, water supply, water quality, water purification, drinking water standard, contamination of drinking water, water pollutants, water pollution. Types of water pollution and its causes. Control of water pollution and water management, Air pollution, source of air pollution, major types of air pollutants and consequences of air pollution. Effects of air pollution on human health. Effects of air pollution on weather, air pollution control, control of gaseous pollution, control of air pollution by legislation and trees, Environmental management objectives of environmental management, principle of Environmental Management, strategy of Environmental management. Natural resources management, solid waste management.

PHYSIOLOGY OF EXERCISE

Definition of exercise, types of exercise, benefit of exercise. Meaning of Physiology and Exercise Physiology, Importance & functions of Exercise Physiology in the field of Physical Education and Sports. Long term and short-term effects of exercise on muscular system, Physiology of respiratory system and types of respiration, mechanism of inhibition and exhibition, effects of exercise on respiratory system, lungs and exercise. Endocrine system, functioning of various endocrine glands pituitary glands, Thyroid gland, adrenal gland, effect of exercise on the functioning of endocrine glands, nervous system, Cardio-vascular system: - Adaptation of heart, Effect of exercise on heart, changes in heart, Blood, Blood pressure, effect of exercise on blood & blood pressure. Physiology of excretory system, effect of exercise on excretory system. Basic physiology of circulatory system effects of exercise on circulatory system, Physiology of Digestive system, stages of digestive process in mouth, stomach, small instinctive, Large instinctive, function of liver, effect of exercise on digestive system. Reflex action, reciprocal intervention. Effect of exercise on nervous system.

HEALTH EDUCATION, FIRST AID AND SAFELY MEASURES

Meaning of Health, Importance of Health, factors influencing Health Status, Characteristics of healthy individual. Health yesterday and today. New directions for health – health promotion, Physiological health, mental health, emotional health social health, spiritual health & happiness. A key to well-being, School health programme and health environment, nutrition, balance diet, caloric value of food for competitive sports. Eating for health, today's dieting guide lines medicated value of food, Methods of Education in Health. Health instructions audio-visual methods. Health organizations- world health organizations, Red Cross, government health agencies. Communicable diseases-modes of transmission, control and prevention of following disease- (i) cholera (ii) small-pox (iii) typhoid (iv) malaria (v) influenza, First Aid: Definition and importance of first aid in modern life, types of first aid, first aid box. Reasons of sports injuries, principle of first aid, functions & qualities of a good first aider, Basic steps in safety measures safety measures for the following (i) bites of animals, burns, control of bleeding, cuts and wounds. Safety for drowning artificial respiration. Safety measures environmental hazards. Heat stroke, heat syncope, wind chill and sunburn.

Physiotherapy

Meaning of Physiotherapy, Scope and utility of physiotherapy, Physiotherapy in sprain, strain, muscle pull, muscle soreness, Hydrotherapy, meaning, precaution in giving the hydrotherapy, Benefits of hydrotherapy, Massage: Meaning and importance in sports, Physical benefits of massage with its utility in sports, Electrotherapy: Meaning & Importance, Danger of using Electrotherapy, Benefits of Electrotherapy, Meaning of Thermo-Therapy, Physiological effects of Thermo- therapy. Do's and don'ts do's in Thermo-Therapy, Cryo-Therapy importance of Cryo-Therapy methods employed in Cryo-Therapy, Exercise therapy meaning of therapeutic exercise, kinds and its utility in sports. Therapeutic exercise for person suffering from back pain and spondylosis. - Meaning of Rehabilitation, importance of Rehabilitation Principles of rehabilitation, Role of Physical Education Teacher in rehabilitation.

Sports Psychology

Meaning of Psychology and Sports Psychology, Scope of Sports Psychology, Psychological factors affecting Sports Performance. Learning, types of learning, Factors affecting learning curve,Meaning and definition of motivation. Types of motivation techniques of motivation, importance of motivation in Physical Education and Sports. Growth & Development, Various stages of growth and development, growth and development during childhood (Psychological, Physical & Motor Development) Psychological characteristics of an

adolescent. Problem of an adolescent, Meaning and definition of personality, Dimensions of personality, Personality traits, factors affecting personality. Role of Physical activities in development of personality, Meaning of Individual Differences, Type of Individual Differences, Factors affecting Individual Differences, Meaning and Definition of emotion.

Foundation of Sports Training

Meaning, definitions, - Aims and objectives of sports training, - Principles of sports training - Importance of Sports Training, Training load, load adaptation, overload and recovery, factors of load. - Circuit training, interval training, (Fartlek training, plyometric training, Sprint training, Development of Motor components: Speed, Strength, endurance, flexibility, agility, Periodization: Meaning and definition of periodization, importance of periodisation single, double and triple, periodization, long term and short term plan, planning for competition main and build up competitions,

Sports Sociology

Meaning, Definition of Sports Sociology, Importance of Sports. - Physical Education and Sports as a Social Phenomenon, Social Institutions: Role of Social Institution in participation in games and sports, Socialization through sports, Sports as regulating institution of society. Sports & Religion how influence in each other, Women in Sports: Social myths related with women. - Attitude of Society towards sports man and Sports women - Future of women participation in sports, Meaning, Definition and characteristics of leadership, qualities of a leader, leadership training in Physical Education, Need and Importance of leadership in Physical Education.

Important Note: The Weightage as mentioned against the syllabus is tentative & may vary.

Syllabus for the post of Male, Female Constable and Sub Inspector (Male) Against Advt. No. 13/2024 (Cat. No. 38, 39 & 40).

Syllabus for Knowledge Test (94.5 Marks):-

The test paper shall include questions on General Studies, General Science, Current Affairs, General Reasoning, Mental Aptitude, Numerical ability, Agriculture, Animal Husbandry, other relevant fields/trade etc. There shall be at least10% questions relating to basic knowledge of computer and at least 20% questions relating to basic knowledge about Haryana. The standard of questions shall be as expected of an educated person having passed 10+2 examination for the post of Constable & Graduation for the post of Sub inspector.

Pattern of Examination: -All questions shall be compulsory. Question paper shall be Bilingual (English & Hindi). An Offline (OMR base) written examination for Knowledge Test will be held for recruitment for the post of Constable. There shall be no negative marking for wrong answer. The total no. of questions will be 100 with weightage of 0.945 marks for each question. A candidate has to fill one option compulsorily out of five options. In case a candidate doesn't mark any of the five options for a question then 0.945 marks for each un-attempted question shall be deducted.

Extra five minutes shall be given to mark fifth options, if candidate does not know the answer. Total time allowed for the paper will be (100+5) =105 minutes including the five minutes.

Important Note: The Weightage as mentioned against the syllabus is tentative & may vary.

Syllabus for written examination for TGT Physical Education, Advt. No. 12/2024, Category No. 1,2,3 & 4

1. ENVIRONMENTAL AWARENESS (Weightage 10%)

Introduction: Basics of ecology, eco system- concept, and sustainable development, Sources, advantages, disadvantages of renewable and non-renewable energy, Rain water harvesting, Deforestation – its effects & control measures.

Air and Noise Pollution: Air Pollution: Source of air pollution. Effect of air pollution on human health, economy, Air pollution control methods, Noise Pollution: Source of noise pollution, Unit of noise, Effect of noise pollution, Acceptable noise level, Different method of minimizing noise pollution.

Water and Soil Pollution: Water Pollution: Impurities in water, Cause of water pollution, Source of water pollution. Effect of water pollution on human health, Concept of DO, BOD, COD. Prevention of water pollution- Water treatment processes, Sewage treatment. Water quality standard, Soil Pollution: Sources of soil pollution, Effects and Control of soil pollution, Types of Solid waste- House hold, Industrial, Agricultural, Biomedical, Disposal of solid waste, Solid waste management E-waste, E – waste management.

Impact of Energy Usage on Environment: Global Warming, Green House Effect, Depletion of Ozone Layer, Acid Rain. Eco-friendly Material, Recycling of Material, Concept of Green Buildings, Concept of Carbon Credit & Carbon footprint.

2. Haryana General Knowledge and Welfare schemes of Haryana Government. (Weightage 20%)

Haryana history, current affairs, literature, Geography, Civics, Environment, Culture etc. and Welfare schemes run by state Government of Haryana and provisions there-in.

3. Road Safety Awareness (Weightage 5%)

Traffic Rules, importance of traffic rules, authority to implement traffic rules, punishment for violating traffic rules, authority to issue driving license, procedure to get driving license, classification of vehicles, traffic signs, knowledge of safety measures in vehicles.

4. Perspectives on Education and Leadership (Weightage 15%)

(a) Understanding the Learner

Concept of growth, maturation and development, principles and debates of development, development tasks and challenges, Domains of Development: Physical, Cognitive, Socio-emotional, Moral etc., deviations in development and its implications, Understanding Adolescence: Needs, challenges and implications for designing institutional support, Role of Primary and Secondary Socialization agencies. Ensuring Home school continuity.

(b) Understanding Teaching Learning

Theoretical perspectives on Learning -Behaviorism, Cognitivism and Constructivism with special reference to their implications for: (i) The role of teacher (ii) The role of learner (iii) Nature of teacher-student relationship (iv) Choice of teaching methods (v) Classroom environment (vi) Understanding of discipline, power etc.

Factors affecting learning and their implications for: (i) Designing classroom instructions, (ii) Planning student activities and, (iii) Creating learning spaces in school.

Planning and Organization of Teaching-Learning; e-Perspectives in Education, NEP-2020: Early Childhood Care and Education: The Foundation of Learning; Foundational Literacy and Numeracy; Curriculum and Pedagogy in Schools: Holistic & Integrated Learning; Equitable and Inclusive Education: Learning for All; Competency based learning and Education. Guiding Principles for Child Rights, Protecting and provisioning for rights of children to safe and secure school environment, Right of Children to free and Compulsory Education Act, 2009, Historically studying the National Policies in education with special reference to school education;

School Curriculum Principles: Perspective, Learning and Knowledge, Curricular Areas, School Stages — Pedagogy & Assessment, (i) Concept of Syllabus and Curriculum, Overt and Hidden Curriculum (ii) Foundational Literacy and Numeracy, Early Childhood Care and Education (iii) Competency based Education, Experiential learning, etc. (iv) Instructional Plans: -Year Plan, Unit Plan, Lesson Plan (v)

Instructional material and resources (vi) Information and Communication Technology (ICT) for teaching-learning (vii) Assessment of learning, for learning and as learning: Meaning, purpose and considerations in planning each. Enhancing Teaching Learning processes: Classroom Observation and Feedback, Reflections and Dialogues as a means of constructivist teaching.

c) Creating Conducive Learning Environment

The concepts of Diversity, disability and Inclusion, implications of disability as social construct, types of disabilities-their identification and interventions, Concept of School Mental Health, addressing the curative, preventive and promotive dimensions of mental health for all students and staff. Provisioning for guidance and counseling, Developing School, and community as a learning resource.

(d) School Organization and Leaders-hip

Leader as reflective practitioner, team builder, initiator, coach, and mentor, Perspectives on School Leadership: instructional, distributed, and transformative, Vision building, goal setting and creating a School development Plan, Using School Processes and forums for strengthening teaching learning-Annual Calendar, time-tabling, parent teacher forums, school assembly, teacher development forums, using achievement data for improving teaching —learning, School Self-Assessment, and Improvement, Creating partnerships with community, industry and other neighboring schools and Higher Education Institutes — forming learning communities.

(e) Perspectives in Education

NEP-2020: Early Childhood Care and Education: The Foundation of Learning; Foundational Literacy and Numeracy; Curriculum and Pedagogy in Schools: Holistic & Integrated Learning; Equitable and Inclusive Education: Learning for All; Competency based learning and Education, Guiding Principles for Child Rights, Protecting and provisioning for rights of children to safe and secure school environment, Right of Children to free and Compulsory Education Act, 2009, Historically studying the National Policies in education with special reference to school education; School Curriculum Principles: Perspective, Learning and Knowledge, Curricular Areas, School Stages — Pedagogy & Assessment

Physical Education **(Weightage 50%)**

Unit.1

1. Definition aim and objectives of physical education, History of physical education pre and post-independence era

Biological foundation of physical education(a.)

Heredity and environment

(b) Classification of personality (Kretchmer's and Sheldon's classification)

Sociological foundation of physical education (family, society, school)

(c) Physical Education in ancient Greece, Rome, Germany, Denmark, Sweden and Russia

Unit.2

Health and Hygiene

(a) Guiding principles of health and health education

(b) Balanced Diet and nutrition health related fitness obesity and its management

(c) First Aid

(d) Communicable Diseases, causes, preventions

(e) School Health Program and Personal Hygiene

(f) Sports injuries and their preventions

(g) Postural deformities and preventions

(h) Sports Medicine Physiotherapy and rehabilitation

Unit 3

Anatomy and Physiology

(a) Meaning and Definition of Anatomy and Physiology

(b) Physiology of Respiration

(c) Physiology of blood circulation

(d) Physiology of skeleton system

(e) Physiology of muscular system

(f) Physiology of Endocrine system

(g) Physiology of digestive system

(h) Neuro transmission and movement mechanism

(i) Ergogenic aids and doping

(j) Factor influencing performance in sports

Unit 4

Kinesiology and Biomechanics

(a) Meaning and Definition of Kinesiology and Biomechanics

(b) Joints and their movements, planes and axis, kinetics, and kinematics linear and angular,levers

(c) Muscular analysis of motor movement

(d) Laws of motion

(e) Principles of equilibrium and farce

(f) Muscular analysis of various sports activities

(g) Mechanical analysis of fundamental movements Kinesiology and Biomechanics, running, jumping, throwing, pulling, pushing, etc.

Unit 5

Psychology and Sociology in sports

(a) Meaning definition aims and objectives of psychology and sociology in sports

(b) Learning Process Theories and laws of Learning, transfer of learning

(c) Motivation internal and external motivation

(d) Psychological factors effecting sports performance

(e) Personality its dimensions and performance

(f) Leadership qualities

(g) Theories and principles of recreation, recreation program for various age categories

Unit 6

Yoga education

(a) Meaning definition history aims and objectives of Yoga

(b) Ashtanga yoga, meaning definition various parts of ashtanga yoga

(c) Surya namaskar and its benefits

(d) Pranayama its types and benefits

(e) Shuddhi kriyas neti,dhoti, Basti, etc.

(f) Importance of yoga in daily life

Unit 7

Test Measurements and evaluation

(a) concept of test, measurement, and evaluation

(b) principles of measurements and evaluation

(c) skill test for badminton, basketball, hockey, soccer, volleyball, Lawn tennis

(d) measurements of Athletics (Track and field events) Major games Minor Games rules and regulations of all games and sports

Unit 8

Sports Management

(a) Concept and principles of management

(b) Organization and functions of sports bodies, intramural and extramural

(c) Management of infrastructure, equipment, finance and personal

(d) Principles of method and techniques of teaching

(e) Principles of planning in sports

(f) Concept of technique of supervision

Unit 9

Sports Training

(a) Principles of sports Training

(b) Training modes and periodization

(c) Training method and various specific training program for development of various motor qualities.

(d) Technical and tactical preparation for sports, short-term and long-term training programs.

(e) Sports talent identification process and procedure

Unit 10

(a) Media and sports

(b) Computer application in physical education and sports

(c) National sports awards

(d) Nature scope and types of research

(e) Methods of research

Important Note: The Weightage as mentioned against the syllabus is tentative & may vary.