GROUP-40

Mason (Level- Matric+ ITI Certificate in Mason Trade)

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, 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.

Building Construction:

Common types of woodtheir description and use, Carpenter's hand tools, their names and uses, Carpentry joints and their uses. Use of nails, screws, dowels, technical terms used in brick masonry, Necessity of bonding bricks. Types of bond Types of mortars, different grades of sand for brick work & plastering. Grades of cement, Brickwork-racking back & toothing. Differences between English & Flemish bonds. Details of English & Flemish bond for 1 and 11 2 brick walls. Precautions at quoins, Cross wall-method of construction. Grouting of mortar, jointing and finishing of brickwork, Types of pointing & tools used. Details of bonding & special precautions at 'T', 'L' and cross junctions. Types of copings, weathering & throating, Pillars: Necessity, types, relation between cross section & height. Details of reinforcement for square &rectangular pillars, Types of cement, sand & lime. English &Flemish Garden wall bonds. PWD specification on brickwork, Foundation: Definition, purpose, types, important terms, causes of failure of foundations, Purpose of arch centring& form work. Different types of bricks &theirsizes.Characteristics of good bricks Sizes of mortar joints for different works. Stretcher & header, RCC lintels: Materials required, method of construction, precast lintels, method of construction of formwork, details of reinforcement, Arches: Purpose, technical terms & types. Setting out an arch, Cavity wall: Technical terms, advantages, constructional details, precautions to be taken at the bottom of cavity, Steps in setting out & marking centre line, excavation line & other lines-use of Deadman checking accuracy & precautions. Windows & ventilators: Including steel windows & ventilators, fixtures &fastenings, plastering: Tools used, necessity of screeds& their fixing, Steps in plastering, Concrete: Ingredients, selection ofmaterials, various ratios of mix, their uses, measuring of materials for mixing, Floors: Types, constructional details such as consolidation of bed, sand filling, concrete base & finishing. Granolithic flooring. Local Municipal byelaws, Purpose of drainage, different systems, their advantages & disadvantages, method of collection, carriage & final disposal of wastage, various types of constructions required. Roofs: Classification, parts, trussed roof, covering materials, House drainage systemnormal layout of drainage, Traps-gully, nahani, etc.- their description, Purpose & method of fixing sanitary fittings such as WC, urinal, washbasin, kitchen sink, etc, Construction of surface drains and laying its surface with bricks, Drainage pipes: Types, materials, sizes, gradient for different diameters, method of laying & jointing, importance of water tightness, concrete base and covering, Septic tank: Purpose, parts and method of construction, Marble floor: types, constructional details, Circular walls: Details of construction. Purposemade bricks,setting out and construction of circular gate pillars with brick/stone/tile/concrete, Hollow block masonry: Laying of hollow blocks for walls & columns, Use of structural clay tile for partition, Precast concrete partition, metal lathe partition and concrete block

partition,Introduction to RCC: Uses, materials, properties and formwork, bending of bars & construction, Reference to ISI code. Reinforced brickwork, Brief description of slabs, beams, lintels, stairs, columns, etc, RCC work: Mixing of concrete, Laying, compacting & curing of concrete, Thumb rule for percentage of reinforcement for lintels, slabs, beams & columns, Necessity hook & cranking. Shear reinforcement, Method of finishing-factors to be kept in mind, PWD specification on the above, Use of glazed tiles for wall facing, steps in fixing, precautions, Construction & expansion joints-method of fillingrepair of crack, Stairs: Technical terms, relation between tread & rise, Types of stairs, construction details of brick, stone & RCC stairs, Spiral stairs with precast concrete steps, Formwork & shutteringtheir removal-precautionsPWD specifications.

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.

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