SYLLABUS : WORK ASSISTANT in DAMB

Trade Practical	Trade Theory	Vocational Cal. & Science
Familiarization with the institute, Importance of Trade Training Instruments Used in the trade. Types of work done by the trainees in the trade. Types of jobs made by the trainees in the trade. Introduction to Safety including firefighting equipment and their uses etc.	-	Applied trade problems-Involving multiplication, division. and common fraction, addition. subtraction, multiplication & division application of fractions and decimals to trade & problems. Conversion of units.
Scales - plain, diagonal and Comparative. Use and applications of different types of lines and conventional sign & symbols.	Principles, representation and construction of different types of scales, graphic scales, recommended scales for drawing with reference to IS codes. Choice of scales. Types of lines and different conventional representation as per IS	Ratio and proportion in trade problems. Units-Different system and conversion.
Drawing plan, elevation of Conversion simple geometrical figures, Dimensioning techniques. Isometric projection of different objects, Conversion of Orthographic of projection to Isometric projection and vice-versa.	Definition and types of projections. Methods of projection as per IS. Projection of points, lines, planes and solids. Sections of solid and their true shapes. Principle of Isometric projection, difference between Isometric drawing & Isometric projection.	Algebra-simple equations and transposition. Problems involving trade problems, quadratic equations and problems. Unit of force, weight, equations of motion. Laws of motion, problems.
Field test of different building construction materials. Showing arrangement of bricks in different parts of bonds, in walls, pillars coping drawing of shoring.	Building materials: Clay products like Bricks, tiles, terracotta, earthenware; stoneware, stone, cement, lime, surki, sand, timber, glass, paints, texture etc. Introduction: Sequence of construction of a building. Names of different parts of building. Bricks masonry	Areas of triangles square. rectangles, Circle, regular polygons etc. and problems, Uses of planimeter and pantograph.

	principles of construction of bonds, Stone masonry, terms used, composite masonry and strength of walls. Timber: Structure Indian timber uses	
Drawing of scaffolding. Drawing details of brick and stone masonry including joints.	Tools and equipment used in Scaffolding.	Area of cut out regular surface, circle, segment and sector of circle etc.
Drawing different types of Shallow & Deep foundation, footing, piles, grillages, foundation raft & well foundation, Layout of Building and other structural members. Drawing details of damp proof courses and plinth protection.	Different types of Shallow & Deep foundation, footing, piles, grillages, foundation raft & well foundation	Calculation on volume and weight of simple solid bodies, such as cubes, squares etc., plotting of problems. simple graph.
Drawing of conventional signs used in engineering survey. Topography and building drawing. Survey using digital theodolite and total station Surveying of a building site with chain catering field book & plotting calculating the area of site. (practice should also be given on exiting building from measurement and producing drawings from these dimensions taken). Handling of levelling instrument.		
Estimation of various quantities of Items of work & preparation abstract of cost..	Road construction materials-Stone, Bitumen, Bituminous materials etc. Road: Introduction to roads, general principles of alignment. Classification and construction of different types of roads.	Material Science: Properties-Physical & Mechanical, Types-Ferrous & Non-Ferrous, difference between Ferrous and Non-Ferrous metals, introduction of Iron, Cast Iron, Wrought Iron, Steel, difference between Iron and Steel, Alloy steel, carbon steel, stainless steel, Non-

		Ferrous metals, Non-Ferrous Alloys.
Drawing details of ground floors concrete brick on edge, tiled, timber, patent stone, mosaic and steel floor.	Types of mortar & concrete proportion and mixing. Plastering and pointing. White washing & distempering. Types of ground floor and methods of constructing granolithic, mosaic brick tiles etc. floors with finishing and polishing.	Trigonometric ratios and functions of multiple angles. Problems on height and distance.
Drawing forms of arches, lintels and centering & Shuttering.	Arches & lintel-technical terms forms of brick and stone, form work and centering. Market forms and sizes.	Centre of gravity.
		Simple estimate connection with trade, Find out quantities of various items including R.C.C.
	Flooring: Different types of floors, materials used in floor and construction process, Modern finishing works including false ceiling etc with interior decoration. Painting, Protective and decorative coatings Protective material Paint-uses, different types, Ingredients. Varnish uses, different types, ingredients Plastering-purpose of plastering, proportion, curing. purpose of curing, plastering method.	Application of trigonometry in site problem (viz. Taper Find out calculation. calculation of materials of finishing items

Simple pipe Connection using G.I. Pipes, socket, elbow, tee, reducing elbow, G.I. union, cap plug, reducer, Three face elbow, reducing socket, plug, G.I. nipple etc. Installation of water meter. Joining of thread joint, lead joint, flange joint, cement joint, D. Joint etc. Different types. of drill. What is taping. Different types of tapings, Drilling and taping of C.I.. main and fixing ferrule and Connection to a house.	Use of plumbing tools Materials used in plumbing Ferrous, non ferrous and non-metal, Different types pipes and fittings Joints GI, PVC, AC,SW, CI, lead steel Properties and use in plumbing work Method of cutting and joining Elbow joint, socket joint, Tee joint, reducing elbow joint, floor trap joint Protection of lining of different types of pipes for Piped Water Supply System (PWSS) Repairing and Spares of different hand pumps	
Layout of soil pipe and waste pipe to the sanitary fitting using different types of fitting. Door junction, door Bend H.R. bend, Plain Bend, Double door junction, inverter junction, cowel, floor trap, Gully trap, P-trap etc.	Water supply Sources of water. Water requirements, Purification Storage of water, Distribution of water	Basic idea about pH BOD, COD, TSS, TDS Minerals etc
Development of Tube well, Gravel/Coarse sand packing, verticality test of Tube Well		
Drawing of pipe line for distribution of water to field, List of materials for Tube Well Drawing section of trenches for laying pipe, various pipe joints, spout chamber, Alignment of pipe line for distribution of water.	Laying of pipe line for distribution of water to field, List of materials for Tube Well. Drawing section of trenches for laying pipe, various pipe joints, spout chamber, Alignment of pipe line for distribution of water.	Do
• Test of cement for consistency. setting times & strength • Conduct field tests for adulteration		Related calculations

• Make proper arrangement to store cement at site • Perform sieve analysis on aggregate • Determine grading. fineness modulus • Determine presence of silt and clay • Perform test to determine shape & size of aggregate • Perform test to determine bulking of sand • Perform test and analyse the effect of Water Quality		
Estimating and casting Need and importance; Types of estimate Items of work, Measurement of items. Calculation of Quantities of various Items, Estimate of one room building by centre line method and separate wall method. Calculation of different Material from the quantities worked out in the estimate.	General and detailed Specification, Estimating and costing, need and importance Types of estimate Items of work items of Measurement Calculation of quantities of various items, Estimate of one room building by centre line method and separate wall method.	Related calculations
Perform white washing. Floor polishing. stain removal from floor	Annual Repair, White washing. Flooring Replacing of glass, Re-polishing of floor Removal of stains from terrace and floor, Special repair, Foundation failure Strengthening of foundation Rectification of leaking roof Repair to expansion joint.	Cost estimation of Repair work
Understanding specifications, standard Operating procedures of various constructions, Excavation, Hoisting, Conveying and Drilling equipments.	Construction equipments • Classification • Selection of equipments • Sources of equipments • Excavation equipment	

	• Tractor • Bull dozer • Excavator • Hoisting equipment • Crane • Pulley • Cable way • Conveying equipments • Belt conveyor • Rope way • Pumping equipments • Drilling equipments • Types of drills • Classification of drill • Drill bits • Selection of drilling pattern.	