Syllabus for the trade

of

PAINTER GENERAL

(SEMESTER PATTERN)

UNDER

CRAFTSMEN TRAINING SCHEME

Designed in: 2013

By

Government of India
Central Staff Training and Research Institute
Directorate General of Employment & Training
Ministry of Labour & Employment
EN -81, Sector-V, Salt Lake City,
Kolkata-700091

List of the Members of Trade Committee Meeting for the trade of **"PAINTER GENERAL"** held on 19th Oct.2011 at ATI, Mumbai

Sl. No.	Name and Designation ,Shri	Organization	Remarks
1.	S/Shri R. K. Pathak Director In Charge/HOD	ATI, Mumbai	Chairman
2.	Abhinoy Nandi Dy. Director of Trg	ATI, Mumbai	Member
3.	Sunil J. Wakde	ATI, Mumbai	Member
4.	S.S. Sonavane, Training officer	ATI, Mumbai	Member
5.	B.P. Dhami Training officer	A.T.I., Mumbai	Member
6.	Bhamare J.S. instructor	I.T.I., Panvel	Member
7.	K.V. Navale, Instructor	I.T.I, Mumbai	Member
8.	Chavdhari S.Y. Instructor	I.T.I, Thane	Member
9.	S.S. Salunke, Instructor	I.T.I, Ambernath	Member
10.	S.T. Golhar, Instructor	I.T.I, kurla	Member
11.	M.H. Wadikar, Instructor	I.T.I, panvel	Member
12.	N.D. Palekar, Instructor	I.T.I, Nandvi	Member
13.	K.D. Patil, Instructor	I.T.I, Mumbai	Member
14.	S.P. Nevarkar, Instructor	I.T.I, Borivali	Member
15.	S.S. Panchal, Instructor	I.T.I, Ambharnath	Member

List of members attended the Workshop to finalize the syllabi of existing CTS into Semester Pattern held from 6th to 10th May'2013 at CSTARI, Kolkata.

Sl. No.	Name & Designation	Organisation	Remarks
1.	R.N. Bandyopadhyaya, Director	CSTARI, Kolkata-91	Chairman
2.	K. L. Kuli, Joint Director of Training	CSTARI, Kolkata-91	Member
3.	K. Srinivasa Rao, Joint Director of Training	CSTARI, Kolkata-91	Member
4.	L.K. Muhkerjee, Deputy Director of Training	CSTARI, Kolkata-91	Member
5.	Ashoke Rarhi, Deputy Director of Training	ATI-EPI, Dehradun	Member
6.	N. Nath, Assistant Director of Training	CSTARI, Kolkata-91	Member
7.	S. Srinivasu, Assistant Director of Training	ATI-EPI, Hyderabad-13	Member
8.	Sharanappa, Assistant Director of Training	ATI-EPI, Hyderabad-13	Member
9.	Ramakrishne Gowda, Assistant Director of Training	FTI, Bangalore	Member
10.	Goutam Das Modak, Assistant Director of Trg./Principal	RVTI, Kolkata-91	Member
11.	Venketesh. Ch. , Principal	Govt. ITI, Dollygunj, Andaman & Nicobar Island	Member
12.	A.K. Ghate, Training Officer	ATI, Mumbai	Member
13.	V.B. Zumbre, Training Officer	ATI, Mumbai	Member
14.	P.M. Radhakrishna pillai, Training Officer	CTI, Chennai-32	Member
15.	A.Jayaraman, Training officer	CTI Chennai-32,	Member
16.	S. Bandyopadhyay, Training Officer	ATI, Kanpur	Member
17.	Suriya Kumari .K , Training Officer	RVTI, Kolkata-91	Member
18.	R.K. Bhattacharyya, Training Officer	RVTI, Trivandrum	Member
19.	Vijay Kumar, Training Officer	ATI, Ludhiana	Member
20.	Anil Kumar, Training Officer	ATI, Ludhiana	Member
21.	Sunil M.K. Training Officer	ATI, Kolkata	Member
22.	Devender, Training Officer	ATI, Kolkata	Member
23.	R. N. Manna, Training Officer	CSTARI, Kolkata-91	Member
24.	Mrs. S. Das, Training Officer	CSTARI, Kolkata-91	Member
25.	Jyoti Balwani, Training Officer	RVTI, Kolkata-91	Member
26.	Pragna H. Ravat, Training Officer	RVTI, Kolkata-91	Member
27.	Sarbojit Neogi, Vocational Instructor	RVTI, Kolkata-91	Member
28.	Nilotpal Saha, Vocational Instructor	I.T.I., Berhampore, Murshidabad, (W.B.)	Member
29.	Vijay Kumar, Data Entry Operator	RVTI, Kolkata-91	Member

GENERAL INFORMATION

1.	Name of the Trade	:	**PAINTER GENERAL**
2.	NCO Code No.	:	
3.	Duration	:	2 years (Four Semesters)
4.	Power Norms	:	5 Kw
5.	Space Norms	:	3.50 Sq Meter / Trainee
6.	Entry qualification	:	8 th Passed
7.	Unit Size	:	16
8.	Instructor's/ Trainer's Qualification	:	a) Tenth Class Passed + NTC + NAC
		:	b) Preference will be given to a candidate With Craft Instructor Certificate

Note : At Least One Instructor must have Degree/Diploma in Relevant Field

Syllabus for the Trade of
"PAINTER GENERAL" under C.T.S.
(Semester Code No. PAG-01)

PASEMESTER – I

Week No.	Practical	Trade Theory	Engineering Drawing	Workshop calculation and science
1.	INDUCTION TRAINING Familiarisation with the Institute –importance of the Trade training - machinery used In the trade type of work done by trainees in the Institute -Type of jobs made by the trainees in the trade- introduction to safety including fire fighting equipments and their uses etc. Importance of the allied trades- types of work done by trainee in allied trades- Induction of practical in allied trade & their importance.	Importance of safety & general precaution observed in the Institute & In the section-importance of the trade on the development of Industrial Economy of the country. What is related instructions-subjects to be taught, achievements to be made recreational, medical facilities and other extra curricular activities of the Institute (All necessary guidance to be provided to the new comers to become familiar with the working of Industrial Training Institute system including stores procedures etc.) Related instructions under allied trade, subjects to be taught & their importance in the trade.	Freehand sketching of straight lines, rectangles, squares, circles, polygons etc.	Applied workshop problem involving multiplication & division common fractions addition, subtraction, multiplication & division application of fraction to shop problems.
2.	CARPENTER: Marking out for carpentry work. Use of carpenters basic hand tools for simple operation viz. Sawing, plaining, chiselling, drilling Etc. Grinding of tools.	CARPENTER: Safety precautions, descriptions, uses & care of hand tools, their names, materials from which made & their uses. Grinding of tools and precaution to be taken.	- do -	- do -
3	Making simple carpentry joints, used in door, windows, timber-floors, panels, wooden partitions etc.	Types of woods their description and use common defects in timber and their effects.	Free hand writing practice of letters and numbers.	Brief description of manufacturing process of pig iron & cast iron. Common

				properties and uses of cast iron, wrought iron,
4	Use of jointing devices - nails, screws, nuts, bolts & dowels joints by wooden filling by glue.	Common joints their description & use. Use of nails, screws hinges, dowels etc. Glue its specification, preparation of compounding and their application.	- do -	- do -
5	Planing & surface preparation of wood for varnishing & polishing.	Use of planer, different types & their functions.	Free hand sketching with dimensions of simple solids such as cubes, rectangular blocks, cylinders, prism etc.	Brief description of manufacturing process of steel. Common properties and uses of plain carbon steel, high carbon steel, high speed steel.
6	SHEET METAL: Importance of skills use of simple tools such as mallets steel rule, snips, etc. Use of ferrous metals for the following operations. Marking cutting, bending, folding. Development of surfaces from drawing. Joining of simple sheet metals of different gauges by simple self secured joints. Joining sheet metal by soft soldering, & brazing.	Introduction to the trade. Safety precaution to be observed. Common hand tools used for sheet metals and definition, description, function and uses. Different types and uses of joints employed in sheet metal work. Description of common machines and equipment used in sheet metal work. Brief description of brazing & soldering.	Free hand sketching of standard elements like - spanners, hammers, chisels, punches, O/S caliper, I/S caliper, Odd Leg Caliper. Draw different types of bolts, nuts, screws, dowels, rivets etc.	- do -
7.	Making of sheet metal articles such as trays, cylinders etc.	Introduction about sheet metal gauges, its equivalent in inch. & mm. Application of sheet metal works such as tinplates, galvanized sheets, iron sheets, copper, brass sheets, aluminium sheets etc. Brief description of physical properties of the above metals.	- do -	- do -

8 to 9	PLUMBING Plumber tools & their uses. Practice of different types of pipe joints/fitting of different materials & of different diameters. Use of different type of binding material for leakage.	PLUMBING: Introduction to the trade. Safety precautions and elementary first aid. Plumbers hand tools description & use. Description on erecting rain water & drainage piping system including installation of water supply fittings. Description of different types of pipes & their uses such as galvanized pipes, lead pipes, aluminum pipes, Brass pipes, PVC & HDPE pipes.	Free hand sketching of Vice, File, Hacksaw, parallel shank twist drill, drill chuck, micrometer, vernier, etc.	Brief description of manufacturing process of copper & aluminium. Properties. Uses of copper, zinc, lead, tin, aluminium, brass, bronze, soldering metals, timber and rubber.
10.	ELECTRICIAN : Practice in series and parallel circuits, different types of wiring, fixing & connecting domestic appliances. Electrical fitting of switch board, conduit pipe wiring, tube/lamp fitting.	Introduction to the trade. Safety precautions and elementary first aid treatment for electric shocks, burns etc. Elementary electricity. General idea of supply system. Electric fitting, types of wiring. Wiring installation for domestic & industrial lighting.	Freehand sketching of nuts & bolts with dimensions from samples.	- do –
11.	-do-	General idea of conduit pipe or PVC pipe wiring & its accessories. Description of electrical wiring materials used for domestic purpose. Familiarize with the electrical wires & its gauges.	Freehand sketching of rivets & washers with dimension from samples.	Calculate area of rectangle, squares, triangles, circle, regular polygons, rectangular block, cubical block, cylinder, cone, sphere, pyramid etc.
12.	MACHINE SHOP: Basic hand tools and their uses. Handling practice of different hand tools. Identification of different machine tools, their components, functions and uses.	Safety precautions for the trade. Brief description of different types of hand tools and their functions. Brief description of various machine tools & accessories & their uses.	Freehand sketching of keys & screw threads with dimensions from samples.	-do-

13.	Sign painting practice in sketching for geometrical shapes, human figures, animal figures and natural scenes with black & white by pencil & colours.	Introduction to elements of arts – such various lines, forms, tones, colour, texture and their applications. Introduction to painting medium such pencil, canvas, papers, etc.	Freehand sketching of Different forms of threads.	-do-
14 to 15.	Drawing practice of gothic & roman letters, architectural, ornamental and freehand. Practice on letters & figures of different types, signals, name plates, advertisement etc.	Conception of colour primary secondary & territory. Definition of colour scheme such as tint, shade, hue, tone monochromic, warm colours, glossary of terms for paints & enamels their nature constituents of paints & method of manufacture. Different types of paints as primer surfaces, under coats, full gloss paint and enamels.	Use of different types of scales used in drawing. Use of different types of lines & symbols for drawing.	Calculate volume of rectangular block, cubical block, cylinder, cone, sphere, pyramid etc
16 to 17	Stenciling: Stencils Cutting practice (minimum three types) on cardboard and paper.	Stenciling: Types of stencils, use & care. Drawing instruments used in lettering, such as T-square, drawing board, sets square, geometrical instrument box etc. and its precautions. Lettering description, types, and its uses.	Use of drawing instruments, T-square, drawing boards, french curves. Draw different sketches uses french curves. Drawing of simple diagram using signs and symbols using colour representation.	-do-
18 to 19	Sign board painting in deferent media, chart, poster festoon, banner, models etc. Use of hand made paint (powder mixing) Ready-made enamel paint, water colour.	Theory of mixing powders - pigments for different colour making with Linseed oil, turpentine oil and varnish,- their function, properties and its application.	Geometrical Construction of figures- triangles, square, hexagon, Octagon, circles, ellipses etc. & dividing of lines, angles into equal parts, tangent to a curve -using drawing instruments.	Definition of mass, weight density and their units. Difference between mass & weight Calculate weight of cylinder, cone, sphere etc.
20.	Painting of walls system of lay out- Advertisement, Industrial and commercial painting. Layout of painting with combination colouring viz. Cinema posters	Painting of walls - Layout process, use of paint, Combination of all colour. Method of evaluating the job works, estimating and	Freehand isometric sketching of simple objects with dimensions.	-do-

	(Including scenery, lettering and portrait).	costing. Preservation of painted articles, posters etc. General idea of commercial artist definition activities.		
21-24	Revision			
25	Project Work / Industrial Visit (Optional)			
26	Examination			

Syllabus for the Trade of
"PAINTER GENERAL" under C.T.S.
(Semester Code No. PAG-02)

SEMESTER – II

Week No.	Practical	Trade Theory	Engineering Drawing	Workshop calculation and science
01 to 02	COMPUTER: Working on operating system. Practice on DTP, CORAL DRAW, PHOTO SHOP etc. for graphic design.	COMPUTER: Basic knowledge of operating system such as DTP, CORAL DRAW, PHOTO SHOP etc. and its application in graphic design.	Projection – introduction, principle, method of projection. Difference between third angle & first angle projection. Draw the projection view in 1st & 3rd method for the same component.	Calculate surface area of chair, table, windows, doors, walls, floors for painting. Calculate cost of painting on the basis of painting material cost & labour cost.
03	PAINTER: Familarisation about painting shop & its safety precaution followed during working. Preparation of wooden surfaces: cleaning, sanding, knotting, artificial wood (staining & graining).	PAINTER: Introduction to safety precautions and health hazards for the trade. Introduction about painter hand tools, brushes of various sizes, diamond glazier, stopping knife, scrapers, palate knife, chisel knife, shave hook plumb line, blow lamp types of rule etc. – their description, use, care & maintenance. Theory of preparation of wooden surfaces	Draw orthographic projections in I & III angle (simple to complex components).	-do-
04 to 05	Preparation, mixing of putty-different process of making. Use of putty on different wooden surfaces.	Putty definition, types, and uses. Method of mixing & its different system of application.	- do -	-do-
06	Surface finishing, varnishing, polishing of wooden furniture such as chair, table, almirahs, trays etc. both old & new.	Varnish - its classification, properties, method of varnishing and polishing. Types of varnishes viz. natural & synthetic, such -	- do -	-do-

		gold sizes, spur varnish, copal varnish etc. Preparation of varnishes.		
07	Preparing of wood surfaces for varnishing, finishing, polishing of doors, windows, panels, partitions of rooms, wooden boxes etc.	-do-	- do -	Basic theory of varnish & paints its types, chemical constituent. Care (Health hazards) & safety precaution to use of varnish and paint. Storing process of varnish, paints & its fire prevention.
08	Metal Surface Painting: Pre-treatment of metalsurfaces for scraping, rubbing by emery, wire brushes, etc.	Metal Surface Painting: Corrosion: - causes of corrosion, effect of corrosion with effect of atmosphere in different places. Types of emery papers, sanding (wet & dry).	- do -	-do-
09 to 10	Metal pre-treatment such as pickling, phosphating etc.	Corrosion on different metals both ferrous and non-ferrous – factors controlling corrosion- corrosion test- atmospheric, water, soil etc. –and its protection.	Freehand isometric sketching from orthographic views.	-do-
11 to 12	Preparing of surfaces for primary coat of different metals, practicing by brushes of various sizes-setting and application practice.	Introduction about primers, its method of application, process for coating different metals and its precaution.	- do -	Algebra-algebraic symbols, addition, subtraction multiplication and division.
13 to 14	Finishing painting by brushes on the metal surfaces like trays, boxes, containers, tables, chairs etc.	Types of brushes. Painter's equipments ladder, step scaffolding, trestle, buckets etc. their description & use.	Views of simple solid cut by section planes. True views of cut sections.	-do-

15	Metal pre-treatment such etching, buffing, wire brushing etc.	Description of metal pre- treatment, its various method and field of application.	- do -	Standard algebraic formulae $(a+b)^2$, $(a/b)^2$ etc.
16	Painting practice on corroted metal surface.	Paint - definition, classification, & uses. Method of selection of paints its application, preparation techniques. Purposes and its effect of paints on metal surface.	Constructions of simple curves of inter penetration objects.	- do -
17 to 18	Painting by brushes on wooden furniture surface, such as Chairs, tables, trays, almirahs, racks, boards, panels etc.	Introduction to paint testing equipments. Description of paint making and mixing equipments its use and safety precaution. Causes of application for use of Nitrocellulose / Shellac, Lacquers for wood surface.	- do -	Simple simultaneous equipments with two unknown quantities.
19 to 20	Painting with brush for different types of pipes such as - cast iron pipe, steel pipe and galvanized pipes, lead pipes, aluminium pipes, synthetic pipes etc.	Introduction to different types of pipe lines such as hot and cold water, liquid & gas, chemicals, oil, steam pipe lines etc. Basic knowledge about colour code symbol for different pipe lines such as gas, steam, water, oil, chemicals etc. Precaution against air pollution. Application of standard paints approved by BIS.	Development of surface of simple objects.	- do -
21 to 24	Revision			
25	Project Work / Industrial Visit (Optional)			
26	Examination			

Syllabus for the Trade of
"PAINTER GENERAL" under C.T.S.
(Semester Code No. PAG-03)

SEMESTER – III

Week No.	Practical	Trade Theory	Engineering Drawing	Workshop calculation and science
01 to 04	SPRAY PAINTING: Spray painting practice on metal surfaces with spray gun.	SPRAY PAINTING: Introduction of spray painting, it's spraying techniques and safety precautions. Advantage and disadvantages of spray painting technique. Introduction to air compressor use for painting work, its types, functions, working and safety precaution etc. Spray painting guns its types, functions, working and safety precautions. Description of various spray painting plants/booth & equipments, method of construction their fields of applications, health & safety precaution etc. on spray painting.	Freehand sketching of different types of rivet joints related to the trade.	Solving problems of percentage, ratio and proportions.
05 to 06	Practice on painting by dipping the metal surfaces, like trays, boxes, containers, castings frames, garden benches etc.	Introduction to dipping by hand & mechanical devices, different types of ovens, their construction working principles, field of application, safety precaution.	Freehand sketching of different pipe joint & flanged joints.	-do-
07 to 08	WALL SURFACE PAINTING: Preparing of surfaces walls, cleaning of rough surfaces, use of nail brushes, iron hit, chiseling, rubbing by emery & brushes etc. for distempering.	WALL SURFACE PAINTING: Description of bonds for plastering walls. Techniques of constructing walls. Methods of erecting scaffolding. Purpose of cleaning walls surfaces & their	Freehand sketching of different shaft couplings with keys.	Definition of speed, velocity & acceleration their units. Difference between speed & velocity. Simple

		effects & processes of cleaning, different methods of cleaning, its description, precautions and uses.		calculation of speed, velocity and acceleration.
09 to 10	Primaring of wall surface and putty filling. Paints & colour shade making, matching colours for ceiling and walls, relief painting and texturing of walls and ceiling. Method of making scaffolding.	Types of wall primer and putty. Lime colour, dry distemper, cement paint, for wall. Process for applying of distemper & cement paints, and its precaution.	Freehand sketching of simple bearings with bearing blocks. Preparation of working drawing of simple bearings.	-do-
11 to 12	Preparing of wall surface for oil paint.	The methods employed in preparing surfaces for oil painting of wall, various painting defects and their remedies. Method of wall painting with oil colour paint. Emulsion paints for buildings.	Freehand sketching of different pulleys & locking system. Preparation of working drawings.	-do-
13 to 14	Painting of walls & ceiling with oil paints.	Method of preparing various oil paints shades. Remedies of atmorphemic corrosion (exterior wall). Calculation of paints required quantity for job work.	Free-hand sketching of simple objects related to the trade & preparation of simple working drawings from the sketches.	Friction – definitions, its effect, types. Laws of friction, angle of friction and its related calculations.
15 to 16	Painting of residential house/offices walls with interior emulsion paints. Colouring of door & windows with oil paints.	Painter's wall painting equipments its classification, functions & their uses. Principles of roller and brush painting its application and precautions. Analysis of rates for simple items of painting works.	Panel board layout of an electroplating-shop.	-do-
17 to 18	Painting of exterior walls with emulsion and cement paints.	Buildings painting by spray gun and brushes, difference – specific application & their defects & remedies. Different colour used, selection of pain s for different types of fitting, electrical, water supply, sanitary & drainage line special	Free hand sketching of small parts related to the trade. Freehand sketching of simple assembled parts.	Definition of work, Power & energy – their units. Calculations of work, Power & energy.

		consideration on painting of high rise building.		
19	Preparation of pigment driers, resins, etc. Practice in the mixing and matching of colours, coloured objects and materials in both oil & water medium.	Pigment, definition, types of pigments, properties of pigments manufacturing processes, their different types and uses. Application of oil driers, resins etc. & their purpose, colour pigments, matching of colours in both oil and water medium.	Freehand sketching of simple assembled parts with colour.	-do-
20	Testing of different varnishes for special gravity weight per litre, viscosity, hardness gloss and finish, adhesion, flexibility & drying time.	Method of testing varnishes.	- do -	-do-
21 to 24	Revision			
25	Project Work / Industrial Visit (Optional)			
26	Examination			

Syllabus for the Trade of
"PAINTER GENERAL" under C.T.S.
(Semester Code No. PAG-04)

SEMESTER – IV

Week No.	Practical	Trade Theory	Engineering Drawing	Workshop calculation and science
01	Testing of different paints for special gravity weight per litre, viscosity, hardness gloss and finish, adhesion, flexibility & drying time.	Method of testing paints.	Freehand sketching of detailed parts & production of working drawings of the parts.	Solving problems of percentage, ratio and proportions.
02 to 03	Stoving enamel of sheet metal & cast iron articles such as cycle parts , fan etc.	Enamel is air drying & stoving. Testing of oil strainers, dry pigments, volatile paints thinners, viscosity drying gloss finish, weight per litre, flexibility & adhesion	-do -	-do -
04 to 05	Novelty finishes air drying of different articles such as fans, type writers, ovens	The procedures involved in novelty painting, precaution to be taken colour schemes.	-do -	Heat Treatment process of metals and its definitions. Baking process of metal body before and after painting.
06 to 07	Painting of Machine Tools such as:- Lathe, shaper, planer slotter, milling, grinding boring machine etc. including accessories. Tools and equipment of different types- brushing, spraying, dipping, removal of paints & surface treatment use of masking equipment.	Process of pre-treatment of metal, surfaces. Standard colour code practices as per classification. Process of painting different type of machine tools, equipment, spare parts etc.	Drawing of different pipe lines and paint as per colour code.	Centre of gravity(CG) – definitions, calculation of CG of body. Effect of (CG) centre of gravity in the trade work.
08 to 09	Repairing of painting defects, preservation of blistering, blooming, fading, lifting, cracking, wrinkling, flaking, sealing, peeling off, runs & sags pine-holding, orange peeling, blushing, missing etc.	Treatment of various defects arising while painting and their remedies, common coating failures, causes and remedies such as lifting, checking, creaking, wrinkling etc.	-do -	-do -

10 to 11	Practice on screen printing in different media such as festoon, posters etc. Screen making, exposing, printing – single & multicolour.	Introduction of screen printing. Types of tools & equipments use for screen printing. Method of screen printing process. Various process of screen printing. Precaution during printing.	Freehand sketching of different machine bodies and paint as per colour code.	Definition of specific gravity, density and relative density. Difference between specific gravity & density. Calculation of density of a body.
12.	Painting in deferent like corners, round parallel, curved surface, angles, rectangular, cone, cylinders, square, and adjustment of spray gun stroke & holding spray-gun etc. for multipurpose work.	Introduction to removal of denting & painting from metal surface. Types of thinners, nitro cellulose (NC) putty, grey surfacer, carpatch etc.	-do -	-do-
13.	Spray painting with compressed air atomization, practice in deferent types of spray-guns with externally feed spray-gun, suction, pressure & gravity feed guns, catalyst spray guns with external mixing of catalyst & resin, their application.	Application of different colour shades and their effects. Procedures of decoration. Procedure for patching work, cleaning of surfaces - curved, round, ornamental grills etc.	-do -	Definition, difference and unit of heat and temperature. Sources of heat and its effect on bodies. Types of heat transfer methods and their differences.
14.	Practice on airless spraying.	Introduction to airless & electrostatic spraying – description, safety precaution.	Freehand sketching of car body and colour shading practice.	-do -
15.	Practice on electrostatic spraying.	Comparison between air & Hydraulically operated guns.	-do -	Electricity – definitions, Ohm's Law, electrical power, energy and units.
16 to 17	Spray painting on car body- finishing – pre-treatment process , primer, surfaces stoving , wet sanding,	Method and application processes of car body finishing and their effect on metal surfaces. Synthetic, cellulose & acrylic paints and	Freehand sketching of building (interior & exterior)	Study of single phase wiring and three phase omestic wiring.

		finishing. Theory of automotive paints.		
18.	synthetic finishing cellulose finishing, acrylic finishes	-do -	-do -	-do-
19	Spray painting (thermo – setting) finishing sheet metal components etc.	-do -	Freehand sketching of building practice of different colour shading.	Study of single phase wiring and three phase omestic wiring.
20 to 21	-do--	-do -	--do-	Study of single phase wiring and three phase omestic wiring.
22	spray painting on scooters and motor cycles including pre-treatment processes.	Method and application processes of powder coating, Use of powder coating paints and baking process.	Freehand sketching of building (interior & exterior)and practice of different colour shading.	Study of single phase wiring and three phase omestic wiring.
23 to 24	Powder coating on metal surfaces such as – fans, tube light fixtures, two wheelers loose parts etc.	--do--	--do--	Study of single phase wiring and three phase omestic wiring.
25	Revision			
26	Examination			

LIST OF TOOLS AND EQUIPMENT FOR 16 TRAINEES + 0NE
FOR THE TRADE OF "PAINTER GENERAL"

A. TRAINEES TOOL KIT:

Sl. No.	Name of the Item	Quantity
1	Rule wooden (size 24 inch) (consumable)	17Nos.
2	Divider steel 150 mm	17Nos.
3	Plumb bob 2 oz	17Nos.
4	Brush softener 25 mm (consumable)	17Nos.
5	Brush stenciling (consumable)	17Nos.
6	Brush writing (consumable)	17Nos.
7	Brush Flat wall 50 mm (consumable)	17Nos.
8	Brush Can paint (consumable)	17Nos.
9	Brush varnish 25 mm. (consumable)	17Nos.
10	Brush distemper 25 mm (consumable)	17Nos.
11	Brush round 9 mm. Paint or varnish (consumable)	17Nos.
12	Brush Hog Hair Fitch (consumable)	17Nos.
13	Brush Flat 12 mm. Varnish (consumable)	17Nos.
14	Brush Dusting (consumable)	17Nos.
15	Brush White Wash (consumable)	17Nos.
16	Knife Put Glazier (consumable)	17Nos.
17	Knife Chisel	17Nos.
18	Knife Stopping	17Nos.
19	Knife Hacking	17Nos.
20	Knife Palette (consumable)	17Nos.
21	Scraper	17Nos.
22	Strainer paint (consumable)	17Nos.
23	Pliers Insulated	17Nos.
24	Pincer	17Nos.
25	Screw Driver 200 mm	17Nos.
26	Working Bench 240 cm x 120 cm x 75 cm	17Nos.
27	Bench Vice 125 mm. Jaw	17Nos.
28	Stainless Steel Rule 48"	17Nos.
29	Porcelain Basin 450	17Nos.
30	Fire Extinguisher	5
31	Fire Buckets with stand	10
32	Steel Lockers with 10 drawers	10
33	Metal Shelving Rack open type	5
34	Drawing Desk	17Nos.
35	Chalk board with case	5
36	Stool	17Nos.
37	Pneumatic chippers	5
38	Orbital wire brushes	17Nos.
39	Portable Electrical Drill Machine 12mm capacity	5
40	Portable hand sander machine	5
41	Scaffold	10

B. TOOLS AND EQUIPMENT

SI. No.	Name of the Item	Quantity
1	Try Square 150 mm	17Nos.
2	Scriber	17Nos.
3	Sliding T – Bevel	17Nos.
4	Marking Gauge	17Nos.
5	Wing Compass	17Nos.
6	Hand Saw 450 mm	17Nos.
7	Tannin Saw 300 mm to 375 mm	17Nos.
8	Jib saw portable	17Nos.
9	Smoothing Plane	17Nos.
10	Mallet	17Nos.
11	Carpenter' Hammer	17Nos.
12	Chisel Firmer 6 mm, 25 mm set	17Nos.
13	Chisel Mortise 9 mm	17Nos.
14	Trying Plane	17Nos.
15	Claw hammer	17Nos.
16	Ball peen hammer 250 gm	17Nos.
17	Oil stone 150x50x25xmm (consumable)	17Nos.
18	Aerograph (Air Brush)	17Nos.
19	Carpenter Vice 225 mm	17Nos.
20	Pallets (consumable)	17Nos.
21	Beam Compass (Stencil cutting)	17Nos.
22	Stencil Knife (consumable)	17Nos.
23	Blow Lamp 500 ml	5 Nos..
24	Steps ladder (wooden)	3 Nos.
25	Trestle Painter with stools	17Nos.
26	Combs (Steel)	10 Nos.
27	Flatter Roller (consumable)	10 Nos.
28	Portable Electrical hand grinder	2 Nos.
29	Disc grinder set	2 No.
30	Goggles (consumable)	17Nos.
31	Gloves (consumable)	17Nos.

C. General Machinery Shop Outfit (as per table) :

SI. No.	Name and description of Machines	Quantity
1	Digital balance (1- 2) Kg capacity	2 No.
2	Weight per liter cup	4 Nos.
3	Ford cup No. 4 for viscosity measurement	4 Nos.
4	Stop Watch	2 Nos.
5	Spraying Mask (consumable)	17Nos.
6	Lay Brush (consumable)	17Nos.
7	Electric oven for paint baking	1 Nos.
8	Face Mask & Respirator (consumable)	17Nos..
9	DFT gauge machine (digital)	2 No.
10	Gloss meter (digital)	2 No.
11	Scratch hardness tester	2 No.
12	Resistively – Meter	2 No.
13	Hegman gauge	2 No.

GENERAL INSTALLATION

1. Gun spray with gravity cup complete with accessories and portable Electric air compressor (with single phase motor).
2. Airless spray-gun with complete accessories.
3. Electrostatic spray-gun with accessories.
4. Pressure Feed Container 20 liter capacity.
5. Dry wash spray booth

Note:

1. The specifications of a number of items in the above list have been in Metric Units, Measuring Instruments such as Steel Rule which are graduated both in English and Metric units May be procured, if available.
2. Indian Standard Norms may be followed by the Instructional staff in respect of instructional materials and specifications for training purpose as far as possible