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SYLLABUS FOR

CARPENTER

Under
CRAFTSMEN TRAINING SCHEME
&
APPRENTICESHIP TRAINING SCHEME

(31)

As approved by
GOVERNMENT OF INDIA

In consultation with
THE NATIONAL COUNCIL FOR
VOCATIONAL TRAINING
&
CENTRAL APPRENTICESHIP COUNCIL

Issued by
GOVERNMENT OF INDIA
MINISTRY OF LABOUR
DIRECTORATE GENERAL OF
EMPLOYMENT & TRAINING
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1988

Sole Publishers & Distributors of

THE TRADE COMMITTEE FOR THE TRADE OF CARPENTER

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GENERAL INFORMATION

- harma,
ning.
- : Garden Reach Ship Builder
and Engineers Limited,
43/46, Garden Reach Road,
Calcutta-24.
- owdhury.
- : Regional Directorate of
Apprenticeship Training
Scheme,
234/4, A.J.C. Bose Road,
Calcutta-20.
- ndi,
r.
- : Advanced Training Institute,
Dasnagar,
Howrah-5.
- ctor.
- : Directorate of Industrial
Training,
Govt. of Bengal,
67, Bentinck Street, 2nd Floor
Calcutta-69.
- sh,
ctor.
- : -do-
- Foreman (P).
- : National Carbon Co. Limited,
5, Rustamjee Parsi Road,
Calcutta-2.
- Dar
(Training).
- : Hindustan Copper Limited,
10, Camac Street,
Calcutta-17.
- rkhar,
st.
- : C.M.E.R.I.,
Durgapur-9.
- a.
- : E.Rly. Wagon Workshop,
Liluah,
Howrah.

- Name of the Trade :— CARPENTER
- N. C. O. Code No. :— 811.10 & 811.20
- Entry Qualification :— Passed in 10th Class
Examination under
10+2 system of edu-
cation with Science as
one of the subject
or its equivalent.
- Duration Craftsman
Training :— 1 Year
- Duration of Apprentice-
ship Training. :— 3 Years including
1 year Basic Training
- Rebate to Ex - I. T. I,
Trainees. :— Full.
- Ratio of Apprentice to
workers. :— 1 : 7

UNDER

CRAFTSMAN TRAINING SCHEME

PERIOD OF TRAINING — 1 YEAR

Trade Practical	Trade Theory	Workshop Cal & Sc.	Eng.	Drg.
(2)	(3)	(4)	(5)	(5)

No. 1 INDUCTION TRAINING :— 1 WEEK WEEK No :— 1

Familiarisation with the institute, workshop, sections in general places. Wood working sections and Wood working machine shop.

Importance of the trade in the industrial development of the country.

Introduction to the safety and student of, proficiency in shop floor and to the machinery to be attended.

Subjects to be taught

Introduction to the

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different exercises/ given by the trainees in various batches etc.

general safety, causes of accident and its remedies.

diff. Audio — visual aid, show room etc.

Give some instructions related with duties of trainees, discipline, 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.)

2 WOODWORKING HAND TOOLS AND JOINARIES :—9 WEEKS (WEEK No. 2 to 10)
Identification of Hand Demonstration and Measuring.

Safety precaution to carpentry hand tools, Workshop discipline and Properties and uses of C. I. and W. I.

Importance of Engg. Drg. and its knowledge— Free hand sketches of

(3)

straight, oblique and perpendicular lines plain figures like square, rectangle, square, circle, polygons triangles etc

Identification of simple geometrical solids from the given models/teaching aids - Free hand sketches for the simple solids like, cube, cone, prism, pyramid, rectangular block etc.

Fundamental Arithmetical operation-Addition, subtraction, Multiplication, Division of whole numbers.

safety First Aid etc. Introduction to the trade.

Introduction to carpentry hand tools, their classifications, names and uses.

Measuring and marking and testing of tools, types, sizes, uses, etc.

Saws and Planes :- Descriptions types sizes, setting, sharpening, uses etc.

Introduction to timber growth of a tree, cross-section of a trunk, parts their formation and function.

Identification of timber.

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tools.

practice:- Using types saws.

cross cutting, oblique sawing

saw horse, Bench vice, Bench stop

fraction of timber, knots, shakes,

NG PRACTICE :-

tration and uses of

of plane, holding, hnique.

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ining face side face edge-

Use of marking gauge

sting of accuracy flat-

wistness of sur-face. use

right edge, Bench stop,

uare, winding strips etc.

planing, edge planing etc.

inding and sharpening

ne blades.

SELLING PRACTICE

monstration and use of

nt types of chisels. Chi-

along the grain, across

rain, vertical, horizon-

inding, sharpening and

g of chisel.

Hand tools :- Continued different type of chisels, descriptions, types, sizes, uses, grinding sharpening, honing etc.

Workshop appliances:- Work bench, bench vice, bench-hook, bench stop shooting board, mite board etc. types-sizes, uses etc.

Properties and uses of plain carbon steel and alloy.

Importance of good printing of letters and numbers on drawing-free hand practice of lettering and numbering styl as per is 696/1972.

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PRACTICE :-

Illustration and making joints :-

g joints Trenching ing joints.

se and tenon joints unched, stob tenon, tenon, bridle joints upening and setting nt type of saws,

Classification and grading of timbers as per I. S. I. defects and diseases in timber, caused and remedies, types of grains.

Joineries :-Classification of joint groups- names (framing, broadening and lengthening)

Frame joints :-

Halving, Trenching and housing joints, description, types and uses.

Mortice and tenon joints different types and uses.

Hand tools :-Sharpening and setting of different types of saws. Saw set, saw sharpening files etc.

Fraction and decimals conversion fraction to decimal and vise versa.

Properties and uses of copper, zinc, lead, tin and Aluminium.

Standard line convention and their meaning and their scope of application on Eng. Drg as per is 669/1972 std. symbols for simple eng. elements and materials used on drg. as per I. S. I. (Hand out to be issued for.)

Free hand sketches. of hand tools and measuring tools, related to the trades e. g. hammer, file, chisel drill, hack-saw tongs snips, solder-Iron mallets, Anvil, punch, horn, blow pipe, electric holder, scale, caliper, try square, Bench vice etc. from the supplied sketches or samples.

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Illustration and making joints :-

dove-tail common lapped dove-tail, mitre-dovetail joints. dovetail template.

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Dovetail joints, description, types pin size, uses etc. Timber : stacking (vertical and horizontal)

Moisture content in timber and its effect on timber moisture meter and oven method

Characteristics of wood Physical and mechanical properties of wood, qualities of good timber.

ening joints :-

Illustration and making types of broadening ple butt, related butt rew, glued butt, tongue butt joints etc.

(4)

Simplification, application of fundamental arithmetical operation to shop problems.

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do

do

Properties and uses of brass, bronze, solder, bearing metal timber, rubber.

System of units-British Metric and S. I. units for length area, volume,

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Strengthening joints :-
Different types of scarf joints:-
scarf, bevel scarf, tenon scarf, etc.

Timber :-
Seasoning :- Types, advantages, disadvantages etc,

Holding and striking tools, Hammers, Mallets etc,

Clamps, gash cramps, 'T' bar cramps etc.

Frame of different type joints.

all article involving joints may be made.

Files :- Types grades uses, care and maintenance of hand tools.

Effect of alloying elements on the property of C. I. and steel.

Importance of Putting dimension on the drawing as per IS 696/1972. How to measure the sizes of simple parts and the locations of the other operational surfaces, using simple measuring instruments and

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how to transfer the measurements or on the drawings of the features for dimensioning; Free hand sketches to study the techniques employed in dimensioning on the Dig. of features for size, location, hole areas, angles, chamfer, taper etc. from given sample or sketches.

MENT :-

linee will be able to identify; Select and use hand and timber and make simple joints.

Division and Assessment of Practical and theoretical

NO. 3 WOOD WORKING MACHINES AND THEIR USES.4 WEEKS (WEEK NO. from 11 to 14)

Introduction on wood working machines and work safety.

Introduction on wood working machine :-

Heat and temperature, thermometric scales their conversion temperature.

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measuring instruments, quantity of heats, specific heat, latent heat, Heat loss and heat gain-Simple problems.

Descriptions, types, sizes, parts, functions operation and safety precautions, care and maintenance, greasing etc. to be explained in brief of the following machines :-

A) Band Saw machine.

B) Circular saw machines.

C) Planing machines (thicknesser and surfacer)

(D) Wood Turning Lathe with turning tools,

Market form of timber-Terms conversion of timber-Method, advantages and disadvantages

(10)

distance with machine operation and operational sizes of all available working machines. Description of each operation on machines :-

saw :- remove and band saw blade and grinding

tions :- Ripping-planks/scantling a log.

cutting, curvica, cutting, bevelling, chamfering

lar Saw :- Ripping cutting rebating, bevelling etc.

ing Machine :- Surfacing, thickening, cham-

(2)

ing, edging bevelling etc, Machine operations Continued :- Wood Turning e :- Use of turning tools, plain turning tapering and turning different articles-Chisel handles; lamp stand etc.

of face plate, chuck

ling Machines :- Use straight shank drills, shank drills, counter bits etc.

nding Machines :- nding of different types ools cutters materials jobs.

Wood working :- Machines continued :-

Introduction of wood working machines, descriptions types sizes, parts, functions, operations and safety precautions, care and maintenance, Oiling, greasing etc. to be explained in brief of the following machines, continued

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stages of each methods and uses,

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- E) Drilling Machines
- F) Grinding Machines
- G) Mortiser
- H) Tenoning
- I) Sander
- J) Portable machine
- K) Universal wood working Machine.
Calculate of timber weight area, volume etc.

TO THE INDUSTRIAL ESTABLISHMENT TO THE DIFFERENT TYPE OF MACHINES AND PARTS AND OPERATIONS.

IEVEMENT :—

revision and Assess-

Rest and Motion,
velocity, acceleration.
Newtons law of Motion.

Is ometrio and oblique. Drawing-their methods of representation using simple solids like cube, rectangular block, stepped block cylindrical features, prisms

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the critical and Practical progress.

ievement :—

nees will be able to the machines.

etc. Free hand sketchies. for the given features

SIMPLE WOODEN FURNITURE MAKING WORK-8 WEEKS (WEEK NO FROM 15-22)

of special Saws :—

Compass saw, frame saw, fret saw etc. Demonstration and practice.

of special planes :—

Compass plane, Moulding etc.

onstration and practical. Making a small wall

Hand Tools :—

Special Saws :— Description, type size, use care and maintenance, sharpening and setting of saws.

Special planes :—

Compass saw frame saw, bow saw fret saw etc. Description, type, size, use care and maintenance

Moment or forces
Simple problems on straight and bell cranked levers.

Mass, Volume, Density, Weight C. G. S. M. K. S. and F. P. S. units of force weight etc. their conversion Shop problems.

(13)

e chalk box. Tea
ice Tray:—

Timber :- Preserva-
tion timber:—

Chemical treatment
of Timber.

Type, process etc.
preservatives used in the
aque plant.

Country drill, hand
drill brace, brest

Country drill, hand
drill bit brace, ratchet
brace, brest drill-Parts
functions, sizes uses in
different places.

different type drill
l aghur layout of a
l make cutting list.
a standard height.
ged stool as per lay
of Adhesives.

Drill bits type, sizes
different uses.

Calculation of timber
required for stool.

Prepare cutting list
from drawing (Sewn
size and finish size)

(14)

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ustration and make
f different furniture.
office board or dis-
d-Use hard board
od and insulation

Description of tim-
bers used in furniture
making work :- Teak,esal
Decder, etc. other wood
as available in the local
market.

ing a small rack or
lf.

Design of Furnitures
for different purpose :-
Bed room, dining Hall,
library, office, work-shop
Class room, Kitchen, ga-
rden etc.

Manufacturing process of
various boards and shut-
like, ply wood block board
laminated board, hard bo-
ard, insulation board, su-
nimal shot etc. and desc-
ridtion, type market size,
use, selection of sheets
and matching grade and
colour.

Power and Roots-
Factors, power, base, ex-
ponent.

Multiplication and
division of power, root
of a number.

Square root by arith-
metics and problem rel-
ated to trade,

Orthographic projec-
tion Std. systems (1st
angle orthographic projec-
tion & 3rd angle projecti-
on IS 696/as per 1972 Free
hand sketches of simple
objects like vee blocks,
stepped blocks, simple
brackets, blacks with
holes and grooves to re-
present the views both
in 1st and 3rd angle.

Orthographic proje-
ction with dimensions.

(15)

Do	Effect of forces on materials in such application as extending, bending, twisting, shearing etc meaning of stress and strain.
Manufactures a small table, demonstration and use of hinges, hasp and staple	Nails and screw :- types, sizes and use, Nuts and tools, washers-do. Lock, hinges, hasp and staple tower bolt etc other fittings:-
	Type sizes and uses.
Carving a small box with top.	Carving ornamental works and tools required for
1 carving exercises of carving tools and sharpening.	Properties of wood. Preparation bill of materials and simple estimation.

REVISION AND ASSESSMENT OF PRACTICAL AND THEORETICAL. PROGRESS.

Assignment :- Should be able to make simple furniture independently.
NIT No. 5 STAINING POLISHING, VERNISHING, ETC. - 4 WEEKS (WEEK No. FROM -23 to 26)

Preparation of surface use of plane for knotty or grained cross grained (16)

Problems on percentage related to trade.

(2)	(3)	(4)	(5)
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Staining, sand papering, preparation of putty and

Staining tools and equipment required.

Meaning of stress, strain modulus of elasticity.

Sand paper, types, grades finish sizes and uses.

on strain and application finished surface.

Preparation of putty and use.

Staining:- Type, process, methods and staining materials.

Timber:- Different staining method applied for different timber.

shing on finished surface

Vernish :- Type and use.

ature polishing:-

French polish, wax polish, types and uses.

ration how to make polish. Use of french wax polish:-

Importance of sectioning on drawing Standard methods (full and half section, revolved and removed section, location as per Is 696 / 1972 std. Parts which are

ve the polish and
ing old furniture.

Estimation of timber.

Ratio and proportion : sectioned-free hand sketches
to represent the different
sectional views in the given
Ratio; finding terms
and ratio; proportions
orthographic drawing of
direct proportion and in-
parts with the support
direct proportion.
of models e. g

ment :- Trainees are able to finish the
furniture with staining vernishing
and polishing.

Simple hollow blocks
and simple castings with
dimensions.

6 REVISION AND HALF YEARLY TEST. (WEEK No. 27)

week revision work be done for trade practical,
dry, workshop calculation and science and Engg.
and half-yearly test may be conducted for all
ts and test result may be reviewed and intimated
needs for their fu ure improvement and guidance.

7 BASIC PATTERN MAKING WORK 8 WEEKS (WEEK No. 28 To 35)

As the trainees have already learnt the Basic
and they are able to handle different types of
and wood working machines, they may b
ple pattern making exercises directly

--do--

--do--

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ification of pattern
and tools.

Introduction to patt-
ern making hand tools.

of contraction rule.
ferent types of patt-

Contraction rule and
difference allowances :-
Shrinkage, drafting ma-
chine allowance the diffe-
rent type of timbers used
in pattern making..

out of simple solid
on the layout board.

Reading of Blue
print.

Application of ratio
and proportion to shop
problem.

How to convert
Isometric to oblique
Drg. orthographic and
orthographic to isome-
tric oblique. Drawings
related problems for free
hand sketches for trade-
related simple parts or
exercises.

ng the pattern as per
king the patterns.

Lay out board and
it's use.

Mixed direct and
indirect proportions-
Problems.

help of wood Work-
ines as per possible.

Types of pattern and
their uses.

ut of split patterns.

Type of pattern con-
tinue split patterns :-

Algebraic symbols
and fundamentals alge-
bric opretions

Free hand sketches
of standard rivet forms
as per I. S. I. welding
symbols as per I. S. I.
employed on drawings.

ing and making split

Types and use.

(19)

standard forms of key and cotters.

Signs and symbols used in algebra; coefficient, terms like and unlike terms.

Free hand sketches to study the method of surface development of simple geometrical solids like cube, cone, prism, pyramids rectangular block etc.

Algebraic addition, subtraction, multiplication and division.

Power and exponent, Laws of exponent.

Algebraic simplification problems.

Electrical and its uses:- Electric current-positive

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Estimate volume of wood and other requirements for pattern making box.

REVISION AND ASSESSMENT OF PRACTICAL AND THEORETICAL PROGRESS.

Trainees should have an idea about different types of patterns and able to make simple wooden patterns, core and core boxes.

SIMPLE FITTING WORK (ALLIED TRAINING 3 WEEKS) WEEK NO. FROM 36 to 38

Precaution Marking

General safety in fitting shop.

—Do—

Screw thread forms as per I. S. I. conventional application of internal and external screw thread-free hand sketches of nut, bolts, screw etc.

of steel rule, square, dividers, compass etc.

Factor and equations algebraic formulae.

of Marking table, g block etc.

Marking Tools :- Type, size, use-core & maintenance of tools :- Steel rule, square, scriber, dividers compass, calipers, and other tools.

—Do—

of hand tools :- w, punch hammer isels, different types

Marking table, marking block, etc. description, size use etc.

Importance of blue print reading - guide line how to read-Simple blue print exercises reading

(21)

related to missing lines, missing views, missing dimension, missing section, identification of surface symbols etc.

Hack saw, punch, hammer cold chisel files etc. type size, use etc.

ions :-

filling etc. some
ises :-

Use of fitting vice
clamps.

g square block drilling
sinking etc. Use
d dies. Grinding of
ls punch, drill bits
king and making
plate corner, plate
e different types of
d angle plate used
len furniture.

Types of drill bits,
and countersink bits
tap and die used in
simple work.

Types of hanging
plates, corner plates,
clamps, angles plates etc.
used in carpentry work.

nut, bolts, washer,
screws etc.

Types of Nut, bolt,
washer, machine screw,
etc.

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REVISION AND ASSESSMENT OF PRACTICAL AND THEORETICAL PROGRESS'

Should be able to do simple fitting work related with carpentry/wood working jobs.

9 SIMPLE SHEET METAL WORK (ALLIED TRAINING - 3 WEEKS) WEEK No. FROM 39 to 41

common hand tools used with Sheet—Metal	Common sheet metal tools :-	Factors and different types of factorisation.
Steel rule square, sheet-metal mallets hammer stakes etc.	Description, type, size and use etc.	Equations—simple— simultaneous—quadratic
development from drawing to make layout of pattern	Reading of develop- ment drawing of simple job and system of lay- out.	application, construction and solution of problems by equations.
line method	Square, cylinder, cone, etc.	
ing proper thin sheets forming the sheets as wings.	Marking and making template for patterns making carpentry work	
marking and making exercises. Punching holes, washers, etc.	Shearing punching folding bending etc.	

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Basic principle of simple and soldering, brazing and welding.

bending sheets at angles.

g aluminium channel g door.

ing bordering with alu- channel angle on table

ask E. R. W. and n channel for furni-

le soldering brazing ing may be done.

T REVISION AND ASSESSMENT OF PRACTICAL ANE THEORITICAL PROGRESS.

evement :— Should be able to make simple sheet metal opratione related to furniture making.

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O. 10 CARPENTRY BUILDING WORK 6-WEEK (WEEK No. FROM (42 To 47)

ion of basis joints with building work,

and making door l door shutters.

ing panel door. glazed shutter and ouldings after fitting

ig practice used in nstruction.

Introduction about carpentry work involved in building construction.

Types of doors :- door shutters, descriptions, sizes, uses, advantage and disadvantages etc.

Types of pannels used in panel / shutter glazed shutter.

Fitting used in door. construction and safety fittings.

ing and making frame and windows use of protection

Types of window frame and window shutters.

Protexion bars:- type and uses.

Geometry

Fundamental geometrical definition, angles and properties of angles, triangles, and

-Do-

(25)

Different froms of energy-heat, mechanical and electrical - Exam- ples, conversion from one form to another.

Solution of NCVI (NCTV I) Test Papers.

ses on Root trusses out marking and ot trusses in reduced odal type) — King en post, etc.	Root trusses:- King post, queen post. etc. Types, related terms, sizes construction etc.	-D-
ses on simple floor on and joints used	Wooden floor:- Brief description, type, cons- truction etc.	-De-
se on partition cons-	Wooden partition:- type, size, construction, etc.	-Do-

VISION AND ASSESSMENT OF PRACTICAL THEORETICAL PROGRESS.

(26)

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11 REPAIRING AND MAKING PACKING CASES 3 WEEKS (WEEK No. FROM 48 To 50)

Revisions		
Revisions	Sector of circle, segment of circle ellipse and fillet.	
	Solid figures - prism, Cylinder, pyramid, cone, sphere, spherical segment material weight and cost shop problems.	
	Practice on simple pocket calculators.	
	Economical factors and material estimate.	
	Packing case :- Type material and tools used.	
	Types of core and their uses.	

2 REVISION AND FINAL TEST 2 WEEKS (WEEK No. 51 and 52)

(27)

For Individual tool kit :- for 16 Trainees — 16 Sets ;
NE Set may be kept for Instructor —
(for demonstration) — 1 Set .
Three Sets may be kept for reserve — 3 Set .

i) For Extra trainees .
ii) For replacement .
iii) For any other skilled worker for
repairing work , maintenance
work etc .

NO.	Description	Quantity	Remarks
1	2.	3,	4.
1	Rule Six 1 meter (inch and mm ,)	20	IS : 1480
2.	Marking Knife , 200 mm . Length .	20	
3.	Carpenter Square .200 mm ,	20	IS : 4017
4.	Square, bevel 50 mm	20	
5.	Carpenter marking gauge .	20	
6.	Carpenter mortice gauge	20	
7.	Saw hand 450 mm ,	20	IS : 5098
8.	Saw tenon 300 mm .	20	IS : 5123
9.	Plane , jack metal 335 mm . x 50 mm cutter .	20	IS : 4057
10.	Plane smoothing , metal 200 mm . x 50 mm cutter ,	20	IS : 4057
11.	Chisel , firmer (bevel) edge) 6mm . 10 , 15 , 20		

TOOLS : EQUIPMENT AND
GENERAL OUTFIT

18. Measuring tape 3 meter	1 Nos .	IS : 1270
19. Contruction scale 1 meter	4 Nos .	
20. Spring caliper inside 150mm.	4 Nos .	IS : 4052
21. Spring caliper out side	4 Nos .	IS : 4052
22. Wing compass 300 mm	2 Nos .	
23. Trammel	2 Pair .	
24. Spirit level 300 mm	2 Nos .	
25. Rip saw 600 mm	4 Nos .	
26. Cross cut saw 600 mm	4 Nos .	
27. Key hole saw 250 mm .	2 Nos .	
28. Fret saw frame 150 mm	2 Nos .	
29. Compass saw 350 mm	4 Nos .	
30. Adze 15 kg	4 Nos .	IS : 663
31. Trying plane Metal)		
450 mm x 60 mm cutter	2 Nos :	IS : 4057
32. Plane ravyet adjustable		

1	2	3	4
3.	Plough plane with set of 8 cutter up to 12 mm width	4 Nos.	
4.	Spoke shaves 50 mm cutter	8 Nos.	
5.	Plane adjustable circular 250 mm	4 Nos.	
5.	Router plane	4 Nos.	
7.	Moulding plane set	4 Nos.	
8.	Cabinet scraper 100 mm	4 Nos.	
9.	Gauge chisel, finer, 6, 10, 12, 16, 20 mm.	8 Set.	
0.	Gauge chisel seriting 6, 10 12 16, 20 mm.	8 Set.	
1.	Ball pein hammer 600 grs	4 Nos.	IS : 841
2.	Cross pein hammer 600 grs	4 Nos.	IS : 841
3.	Screw driver 450 mm	4 Nos.	IS : 844
4.	Screw driver 250 mm	4 Nos.	IS : 844
5.	Screw driver 150 mm	4 Nos.	IS : 844
6.	Pincer 50 mm.	4 Nos.	IS : 4095
7.	File half round 2nd cut 250 mm :	8 Nos.	IS : 1931
8.	File half round wood rasp bastard 300 mm	8 Nos.	IS : 3587
6.	File slim taper 100 mm	12 Nos.	
0.	File slim taper 150 mm	12 Nos.	
1.	Card file (steel) wire brush for file	4 Nos.	
2.	Hand drill 6 mm capacity	8 Nos.	
3.	Country drill with bow (Ball bearing type)	4 Nos.	
4.	Ratchel Brace 250 mm Swap	4 Nos.	IS : 7042
5.	Hand Auger 10, 12, 14, 16	2 Sets	

1	2	3	4
57.	Expansion bit sets.	2 sets.	
58	Twist drill bits 6, 8, 10, 12, mm.	2 sets.	
59.	Counter sink bit rose type 12 mm.	4 Nos.	
60.	Breast drill 6 mm capacity	2 Nos.	
61.	Centre punch 5	4 Nos.	IS : 7177
62.	Snip straight 200 mm.	1 No.	
63.	Oil can combination side cutting pliers.	2 Nos.	
64.	Plunger saw set/pistol grip type.	2 Nos.	
65.	Number punch 12 mm.	2 Sets.	
66.	Slip stone 100 mm.	8 Nos.	
67.	Round crow bar with chisel and claw end 1070 x 25 mm.	2 Nos.	
68.	'G' clamp 100.	8 Nos.	
69.	'G' clamp 150 mm.	8 Nos.	
70.	'G' clamp 250 mm.	4 Nos.	
71.	'T' bar cramp 0.6 meter.	8 Nos.	
72.	'T' bar cramp 1.25 meter.	4 Nos.	
73.	'T' bar cramp 1.75 meter.	2 Nos.	
74.	Carpenter vice 250 mm jaws.	16 Nos.	
75.	Saw sharpening vice 250 jaws.	2 Nos.	
76.	Carving tools set.	4 Sets.	
77.	Goggles pair.	2 Nos.	
78.	Glass cutter.	2 Nos.	
79.	Nail punch.	4 Nos.	
80.	Surface plate 600 x 600 mm.	1 No.	
81 A	Carpenter's work Bench 2400 x 900 x 800 mm. height.	8 Nos.	
81.	Oil Can,	4 Nos.	IS : 4561
82.	Steel lockers, 8 compartments, with individual locks.		

1	2	3	4
84.	Instructor table (half secretariate.)	1 No.	
85.	Instructor chair.	2 No.	
86.	Stool.	1 No.	
87.	Chalk board with easel.	1 No.	
88.	Material Rack.	1 No.	

GENERAL INSTALLATION AND ACCESSORIES

89.	Combind surfacer and thickner.	1 No.	
90.	Circular saw machine 3.00 mm dia.	1 No.	
91.	'Lathe, wood turning.' 150 mm height of centres 1.75 meter bed, Motorised complete with a set of turning tools.	3 Nos.	
92.	Set of Turning tools for above lathe machine.	3 sets.	
93.	Tenoning Machine (Single ended)	1 No.	
94.	Mortising machine (Combind hollow chisel and chain)	1 No.	
95.	Bench grinder 200 mm wheel D. E. Pedestal	1 No.	
96.	Drill machine 12 mm capacity	1 No.	
97.	Portable electric Drill 6 mm. capacity (wolf type)	1 No.	
98.	Drill chuck 12 mm capacity	1 No.	
99.	Portable disc sander 200 mm dia.	1 No.	
100.	Adjustable saw sharpener	1 No.	
101.	Electric Heater 1000/ 1500 W	1 No.	
102.	Electric Blower (portable)	1 No.	

1	2	3	4
105.	Spanner double ended set of 14.	1 No. set.	
106.	Universal wood working machine.	1 No.	
107.	Electrical Drying oven (small type).	1 No.	
108.	Band saw machine with provision of jointing the saw. (Narrow type)	1 No.	
109.	Fire extinguisher.	2 Nos.	
110.	Fire buckets.	4 Nos.	

- Note : 1. No additional items are required to be provided to the batch or unit working in the second shift except the items under the Trainees tool kit and lockers.
2. The trainee for the main trade will be sent to the different sections for allied trade training. Separate list of tools and equipment required for allied trades are not included in this 1st.

SYLLABUS FOR THE TRADE OF CARPENTER UNDER APPRENTICESHIP TRAINING SCHEME

PERIOD OF TRAINING— 3 YEARS.

Note : The period of one year (first year) and the content in the Craftsmen Training Scheme under Industrial Training Institute or Model Training Institute to be followed in the first year of APP. Trg. Scheme (The syllabus for this trade should be considered as a guide for imparting app. training according to the facilities available in Industry).

PRACTICAL : (SHOP TRAINING) 2nd and 3rd year.

List of operations/skills/jobs are given below. It is not necessary that the operations should be performed in the order in which they are listed.

1. Revision of basic skills/operations done in the 1st year.
2. Introduction in safety precautions in the shop floor.
3. Making a template and lay out of a job.
4. Using of special hand tools— Use of bow saw, fret saw, key-hole saw etc. use of planes—block planes, shoulder plane, plough planes, compass planes, router etc. Chisels—bering tools, bit, expansion bit etc. use of carving hand tools.
5. Grinding and sharpening of hand tools,—plane cutter chisels, cutters for rebate planes, moulding planes.
6. Sharpening and setting of different types of saws.
7. Stacking and seasoning of timber.
8. Carving of simple figures.
9. Use of laminated sheet—block boards, ply-wood, sunmica sheets, insulation boards etc.
0. Veneering and its use.
1. Use of different types of wood screws, nails, Coach screws etc.
2. Preparation of wooden dowels their uses, use of metal dowels.
3. Fittings of hinges, locks, handles, fasteners, towerl bolts, flush bolts, castors, hasp and staple, door rings etc.
4. Preparation of bill of material for different jobs, estimation and costing.
5. Marking out and of Tusk tenon joint.
6. Preparation of different types of dovetail joints; common dovetail, lapped dovetail, secret dovetail, splay dovetail.
7. Making furniture : stool, tray, tables, etc.
8. Marking and making book shelf, rack and cabinet etc.
9. Making writing table with drawer and cupboard fitting of

24. Construction of floor.
25. Lay out and making of partition.
26. Construction of stair cases.
27. Making ceiling. Fixing hard board or any insulation board, use different mouldings to cover joint.
28. Construction of louvres.
29. Construction of sky and latern roof light.
30. Making roof truss and construction.
31. Timbering for trench.
32. Storage and preservation of different types of timber.
33. Use of wood working machines including circular saw sur-facer, planer and thicknesser, morticing (chain and hollow chisel) tenoing machines, band saw, fret saw, spindle moulder, wood turning lathe, Universal wood-working machine.
34. Construction of shuttering (form work).
35. Use of adhesives.
36. Sand papering and finishing surface for applying wood finishing materials.
37. Sponging the surface, filling up the nail holes and cracks etc.
38. Staining.
39. Vernishing.
40. Wax polishing.
41. French polishing.
42. Laquar finishing.
43. Painting.
44. Use and care of portable power hand tools.
45. Working to simple architectural drawing.

ALLIED TRADE TRAINING :- (4 weeks each).

Blacksmith work : Each Apprentice must learn to make some carpentry tools chisels, nail punch, bending angles, plates, bracket etc.

And also learn the process of annelling, hardening and tempering of carpentry tools, etc.

SHEET-METAL WORK : fitting work have already done in the first year.

Revision work may be done 2 weeks in each trade.

B. RELATED INSTRUCTION :- (trade theory)

In 1st year basic related instruction on Hand tools, Timber, joineries, wood working machines etc. have been given to the Apprentices in brief.

In 2nd year and 3rd year they are expected to learn more in details.

Following Lesson Topics are appended below :-

- General safety - for men, machines, materials etc.
- Introduction to the workshop activities and general discipline.
- Properties and uses of common engineering materials.
- Properties of wood.
- Seasoning of timber - Natural, artificial. Stacking vertical, horizontal etc.
- Diseases and defects on timber.
- Shrinkage and its effect on various cross-section timber.
- Preservation of timbers, and preservatives, used in the process.
- Conversion of timber - various method used - advantages and disadvantages.
- Market forms of timber.
- Calculation of timber (Log, form, plank from etc.) (both in cubic feet and cubic centimeter/cubic meter.)
- Strength data of timber :- as various form of timber such as beam, post, rail etc.
- Description of timber :- Hard wood-varities : teak, sal, haldu etc.
- Description of timber :- Soft wood-varities : Deodar, Jar, chair etc.
- Selection of timber for various work : Need of selection of suitable timber for different works :- For furniture, building construction (doors, window, ventilators, etc) Body building work (bus, Railway, Boat etc) for hammer handlee, sports goods.
- Description and use of veneer, ply - wood, block board, hard boards and other laminated boards.
- Use of sunmica sheet, insulated board, limpet sheets, tetex board.

- hook, mitre board, mitre box, shooting board, hold fast, pin block etc.
- 20. Different type of saws; including special saws; discription types uses, sharpening, etc.
- 21. Planes : types, sizes, uses, defects in planes and remedies etc
- 22. Special planes : compass plane, grooving, rebate planes, moulding planes etc descriptions, sizes, uses, etc.
- 23. Chisels : firmer, paring, gouges, : Grinding, sharpening, honing
- 24. Different types of striking tools. Hammers, mallets : types, use and sizes.
- 25. Oil stones and slip stones etc. sizes, grades, uses.
- 26. SCREW drivers : types, sizes, shape of tip, uses care and maintenance.
- 27. Hand drill, bit braces, hand augur, country drill, bradwah etc. and bits : types sizes and their uses in carpentry work.
- 28. Filos :- Hasp saw sharpening files, other files used in carpentry work. Type, grades, sizes uses etc.
- 29. Classification of joints used in carpentry.
- 30. Types of framing joints : Halving varieties, types, uses.
- 31. Different types of mortice and tenon joints-bridle joint etc. and uses.
- 32. Housing joints ; types, uses.
- 33. Dovetail varieties : single, common, lapped, secret, splay etc.
- 34. Broadening joints : Simple butt, doweled butt, rebated joints, tongued and grooved joints, etc
- 35. Lengthen joints : Lapped, splayed, scarf joints etc.
- 36. Selection timber for different kinds of joints. Considering their strength and utility.
- 37. Description and method of single joiner's rod.
- 38. Designing of furniture : (indoor and out-door).
- 39. Timber selection for different furnitures.
- 40. Sizes and specification of furnitures used in different places.
- 41. Types of door frame and door shutters (used in building construction)

Partitions :- Solid, framed, folding, : name of members, etc.

Stair : terms, construction, etc.

Roof trusses : types constructions, terms related with roof, pitch angles, roofing materials, etc.

Ceiling : Construction, covering materials, and joint mouldings.

Different types and uses of pre-fabricated work.

Description and use of schillac, wax, lacquer and their application for surface finish.

Insulation materials- Description, types and use methods of application.

Description and use of synthetic adhesives- types and methods of applications.

Sand paper : types, uses etc.

Staining : types, materials used.

Grain filling : putty type uses etc.

Vernishing.

Wax polish and laquer finish.

French polish.

Common paints used in carpentry.

Use of care of portable power hand tools.

Wood working Machines and their descriptions and uses.

Types of Hings, locks, hasp and staple nut-bolt, coach screw/bolts, door bolts, etc. Different fittings used in carpentry.

Introduction to work simplification job study, job analysis including planning of squence of operation, critical approach and method or working.

Estimation of Materials used in the job)
Estimation of Labour charges for the job) TOTAL COST

Note :—Many topics are basically completed in the 1st yr. but including on the 2nd yr. for making revision as well as for giving detail/instructions related with

C. WORK SHOP SCIENCE AND CALCULATION (2nd and 3rd year)

1. Revision of previous year's year work.
2. Elementary trigonometry and its application to the shop-floor problems.
3. Problems connected with the estimation of time, materials, cost, etc. for the trade.
4. Algebra :- Algebraic symbols. addition, subtraction, multiplication and division of expressions involving algebraic symbols.
Simple equations and transpositions-problems. Standard algebraic formulae e. g. $(a+b)^2$. Simple simultaneous equations with two unknown quantities.
5. Further problems as applicable to the trade.
6. Advanced problems on mensuration, work, power, and energy.
7. Meaning of tenacity, elasticity, malleability, plasticity, hardness, compressibility and ductility.
8. Meaning of stress, strain, modulus of elasticity, ultimate tensile strength, factor of safety and different types of stresses.
9. Descriptive explanation of expansion of solids. Liquid and gases due to heat-co-efficient of expansion.
Brief description of transference of heat-conduction, convection and radiation.
10. Properties and use of common fuels-coal-oil-B. th. U, C. H. U, calorie—Specific heat of liquid and solid, Caloric value of different types of fuels.

D. ENGG. DRG. (2nd and 3rd year)

1. Revision of previous year's work.
2. Development of surfaces of simple objects.
3. Curves of interpenetration-simple exercises.
4. Free-hand sketching of jogs and fixtures as applicable to the trade.

SOCIAL STUDIES :—

The syllabus has already been approved and is same for all the trades.

LIST OF SUGGESTED BOOKS FOR THE TRADE OF CARPENTRY

No.	Titles of Books	Authors	Publishers
1)	(2)	(3)	(4)
1.	General Wood Working	Chris H. Groneman	Megraw Hill.
2.	Questions and Ans. on Carpentry	Alfred Brig. Wood	Newmans Ltd. London.
3.	The art of wood working and Furniture making.	A. Gregory	Dryad Press, Leicester.
4.	Newne Is Carpentry & Joinery.	E. Molloy	George Newnen Loudon.
5.	Wood Working Mechanist.	R. H. Norder	Caseton Publishing.
6.	The Carpenter & Joiner	N. W. Key	Odham's Press London.
7.	Wood preservation in India.	A. Puoshattam	Manager of publication, New Delhi.
8.	100 Beautiful pieces of Furniture.	Popular Mech. Chicago.
9.	Modern Furniture Veneering	R. W. Hobbs.	Technical Press, London.
10.	The practical printer & Decorator	Odham's Press London
11.	Practical Home Wood Working.	—do—
12.	Wood Working Crafts.	Raymonds. Van Tassell	D. Van Nostrand and Co. Forest research Institute De-
13.	Wood is good

(1)	(2)	(3)	(4)
15.	Modern wood working and furniture making	G. H. Barker	Technical press London.
16.	Safe work practice in Wood working	Harald G. Silvins	American Technical Society Chicago.
17.	Constructive wood work	A. Gregory	Dyad press, Leicester.
18.	Forty pieces of fine furniture.	Herman, Hjorth	Milwan Kee Bruce publication, USA
19.	Operation of Modern wood working Machine.	—do—	—do—
20.	Machine wood working	Robert E. Smith	M. C. Knight & Bloomington
21.	Make it yourself Furniture for the home craftsman.	Jeffery H. Livingston.	M. C. Graw Hill. N. Y.
22.	Principle of machine working : Spindle Moulder	A. H. Hay Cock	Tech Press London
23.	Principle of machine four cutter practice.	—do—	—do—
24.	—do— Tenoning, Mortising and Boring	—do—	—do—
25.	—do— Routing	—do—	—do—
26.	—do— Sawing & planing	—do—	—do—
27.	Cabinet and Mill work.	Alf Dahl & J. Douglas Wilson	American Tech. society, Chicago.
28.	Fundamentals of Carpentry	Walter E. Durbahn	—do—
29.	The practical carpentry & Joinery.	N. W. Key	Odham's press, London.
30.	More Ply-wood project for the home Craftsman	Robert Scharff.	M. C. Craw Hill,
31.	Study guide for cabinet	L. C. Smith	American Tech

	(2)	(3)	(4)
onal Furniture.			Bruce publi- sher, US.
Project in wood work	J. H. Donglas		Meknight & Meknight Illenons.
Principles of wood- working	W. F. Holtrop & Herman Hicrth		Millwankee, Bruce Publi- sher.
Modern Machine wood- working.	W.F. Holtrop & Herman Holtrop		Milwankee, Bruce Publi- sher.
Basic Wood Working process.	Herman Hjorth.		--do--
Hand wood working tools.	Leo P. Medonnel		Dolmar, N.Y.
Wood working Machi- nery Theory & Practice	Robert H. Hordern		Issac Pitman, London
Wood work Theory (In Bengali)	D. C. Chowdhury		Indian Book Distributing Calcutta.
School craft work in wood	Edwin W. Luker		Technical Press London
Carpentry (Tech. Yourself)	Charles Hayward		Eng. Univer- sity Press London.
Wood Preservation in India	J. N. Pande & Y. G. Jadhar		Survey of India Dehr- adun.
General woodworking	Verne G. Fryk- ind & A. J. L. Beerge.		Meknight & Menknight Bloomington.
Carpentry work Book	Elbert A. Lair		M. C. Graw Hill, N
Science of Wood	I.M.Perlevgin		Peace Publica- tion, Moscow.
Wood Working in theory and Practice	John A. Walter		George G. Harap.
Carpentry & joinery	Frank Keeling		Cleaver Hume, London

	(1)	(2)	(3)	(4)
50.	Wood & wood wor- king For Industrial arts	Delmar W. Olson		Prentice Hall, N. J. (New Jersey)
51.	How to build mode- rn Furniture	Mario Dal Fabbro		F. E. Dodge corp. N. Y.
52.	Joinery	W. B. Mekay		Longman, London
53.	Wood Work :A cou- rse of first Exam.	M. M. Waters		Arnold London
54.	Wood Working Fu- ndamentals	William D. Wolansly		Megraj - Hill N. Y.
55.	Practical Wood work	A. W. P. Kettles		B. T. Batsford London.
56.	French Polishing and Varnishing	David Slater		Cassel, London
57.	Wood Turning made easy	--do--		--do--
58.	Hand and wood ma- chine wood work	H. G. Miller		Macmillan Co Toronto
95.	Wood working for every body	John Gerald Shea		East & West New Delhi
60.	Wood working	W. Hirte		Asia Publisher- Bombay
61.	Kather Kaj. (in Bengali)	Lakshmeswar Singha		Orient Longman, Calcutta.
62.	Curriculum Outli- nes and Bibh Re- lated Instruction for Apprentices in Carpentry.	School Dist- rict of Phila- delphia.		

TRADE : CARPENTRY
**LIST OF I. S. I. PUBLICATIONS FOR THE USE OF
INSTRUCTORS**

Sl. No.	I. S. I. CODE No.	ITEMS
1.	IS: 10-1970	Ply wood tea. chests.
2.	IS: 16-1966	Shellac

(1)	(2)	(3)
		intended for further conversion.
6.	IS:204-1966	Tower bolts
7.	IS:205-1966	Non - Ferrous metal butt hinges
8.	IS:206-1962	Tea and trap hinges.
9.	IS:207-1964	Gate and shutter hooks and eyes.
10.	IS:208-1965	Door handles.
11.	IS:275-1961	PADLOCKS.
12.	IS:281-1964	Mild steel sliding door bolts for use with padlocks.
13.	IS:287-1960	Recommendations for maximum permissible moisture content of timber used for different purposes in different climatic zones.
14.	IS:303-1960	Plywood for general purpose
15.	IS:337-1952	Varnish, finishing interior
16.	IS:345-1952	Wood - filler, Transperent, liqued.
17.	IS:346-1952	Varnish, spirit clear, hard,
18.	IS:347-1952	Varnish, shellac, for general purpose.
19.	IS:348-1968	French polish
20.	IS:349-1955	Lacquer, cellulose, clear.
21.	IS:362-1968	Parliament hinges.
22.	IS:363-1970	Hasps and staples.
23.	IS:364-1970	Fanlight catch.
24.	IS:365-1965	Electric hot-plates.
25.	IS:380-1967	French chalk, technical.
26.	IS:384-1964	Brushes, paints and Varnishes, flat.
27.	IS:385-1962	Liquid drien for paints.
28.	IS:393-1968	Ink, stamp-pad
29.	IS:399-1963	Classification of commercial timbers and their zonal distribution.
		Code of practice for preser

(1)	(2)	(3)
32.	IS: 413-1965	Punches, round
33.	IS: 419-1967	Putty for use on window frames.
34.	IS: 421-1953	Jointing paste, for bedding mouldings.
35.	IS: 423-1961	Plastic wood joiners filler
36.	IS: 451-1961	Wood screws.
37.	IS: 452-1960	Door springs rat-tail type
38.	IS: 453-1963	Double acting spring hinges.
39.	IS: 525-1963	Varnish, finishing exterior and general purposes.
40.	IS: 533-1954	Gum spirit of turpentine (oil of turpentine)
41.	IS: 553-1969	Gum roson.
42.	IS: 620-1965	General requirements for wooden tools handle
43.	IS: 656-1964	Legs for plywood.
44.	IS: 663-1964	Adzes.
45.	IS: 703-1966	Axes.
46.	IS: 704-1966	Crow bars and claw bars.
47.	IS: 707-1968	Glossary of terms applicable to timber and timber products
48.	IS: 710-1957	Marine ply wood
48.A.	IS: 715-1966	Coated abrasives, glue bond.
49.	IS: 723-1961	Mild steel wire nails.
50.	IS: 724-1964	Mild steel and brass cup ruler and square hooks and screw eyes.
51.	IS: 725-1961	Copper wire nails.
52.	IS: 729-1969	Drawer locks, cupboard locks and box locks.
53.	IS: 786-1967	Conversion factors and conversion tables.
54.	IS: 841-1968	Hand hammers.
55.	IS: 844-1962	Screw Driver.
56.	IS: 848-1957	Synthetic resin adhesives for plywood.
57.	IS: 849-1957	Gold setting casein glue for

	(2)	(3)
		for construction work in wood.
59. IS : 852—1962		Animal glue for general wood working purposes.
60. IS : 876—1970		Wood poles for overhead power & telecommunication lines.
61. IS : 1003—		Timber panelled and glazed shutters.
62. IS : 1003	(Part—1)	Door shutters.
63. IS : 1966	(part—11)	Window and ventilator shutters.
64. IS : 1018—1961		Brass padlocks.
65. IS : 1019—1963		Rim latch.
66. IS : 1020—1963		Conversion tables for ordinary use.
67. IS : 1141—1958		Code of practice for seasoning of timber.
68. IS : 1150—1966		Trade names and abbreviated symbols for timber species.
69. IS : 1249—1958		Recommendations for selection of grinding wheels.
70. IS : 1262—1958		Abrasive specialities.
71. IS : 1270—1965		Metric steel tape measures (winding) type.
72. IS : 1326—1958		Non-coniferous sawn timber for further conversion.
73. IS : 1328—1970		Veneered decorative plywood.
74. IS : 1329—1958		Aircraft timber intended for further conversion.
75. IS : 1331—1966		Cut size of timber.
76. IS : 1341—1970		Steel butt hinges.
77. IS : 1360—1963		Engineers' pattern Tee squares.
78. IS : 1375—1959		Black lead pencil.
79. IS : 1480—1960		Metric scale for general

(1)	(2)	(3)
82. IS : 1504—1968		Commercial bees wax.
83. IS : 1629—1960		Rules for grading of grad cut sizes of timber.
84. IS : 1634—1960		Code of practice for design and construction of wood stairs.
85. IS : 1658—1966		Fibre hardboards.
86. IS : 1659—1969		Block boards.
87. IS : 1707—1960		Wood wool for general packing purposes.
88. IS : 1708—1969		Methods of testing small clear specimens of timber.
89. IS : 1823—1968		Floor door stoppers.
90. IS : 1826—1961		Venetian blinds for windows.
91. IS : 1829—1961		Library furniture and fittings.
92. IS : 1829—1961	(Part—1)	Timbers.
93. IS : 1837—1961		Fanlight pivots.
94. IS : 1898—1961		Timber for use in aircraft construction.
95. IS : 1900—1961		Method of testing wood poles.
96. A IS : 1930—1961		Wood-working chisel and gauges.
96. IS : 1931—1962		Engineers files.
97. IS : 2028—1968		Open jaw spanners
98. IS : 2133—1962		Wooden tent pins.
99. IS : 2178—1962		Timber for use in aircraft propellers.
100. IS : 2179—1962		Converted timber for lorry bodies.
101. IS : 2191—1966	(Part—1)	Particle board face panels.
102. IS : 2191—1966	(Part—II)	Plywood for face panels.
103. IS : 2191—1966		Wooden flush door shutters.
104. IS : 2202—1966		Wooden flush door shutters (solid core type)

(1)	(2)	(3)
8	IS : 2209—1962	Mortice lock (vertical type)
9.	IS : 2243—1971	Drill chucks.
10.	IS : 2332—1963	Nonmenclature of floors and storeys.
11.	IS : 2333—1963	Plaster of Paris.
12.	IS : 2338—1967	Code of practice for finishing of wood and wood-based materials.
13.	IS : 2338—1967 (Part—I)	Operations and workman.
14.	IS : 2338—1967 (Part—II)	Schedules lays down schedules for finishing of wood and wood-based materials.
15.	IS : 2366—1963	Code of practice for nail joined timber construction.
16.	IS : 2372—1963	Timber for cooling towers.
17.	IS : 2377—1967	Tables for volume of cut sizes of timber.
18.	IS : 2380—1963	Method of test for wood particle boards and boards from other lignocellulosic materials.
19.	IS : 2408—1963	Methods of static tests of timber in structural sizes.
20.	IS : 2455—1963	Methods of sampling and presentation of data for timber testing.
21.	IS : 2468—1963	Whiting for putty.
22.	IS : 2609—1964	Coach bolts (M 6 to M 24).
23.	IS : 2674—1964	Plywood cases-battend construction.
24 A.	IS : 2681, 2700—1964	Roofing with wooden single.
25.	IS : 2852—1964	Carpenter's augers.
26.	IS : 2891—1964	Wooden handles for felling axe and hand axe.
27.	IS : 2893—1964	Wooden handles for adzes.
28.	IS : 2894—1965	Wooden handle for wood working chisels and gauges.

(1)	(2)	(3)
131.	IS : 2911—1965	Timber piles.
132.	IS : 2921—1964	Wooden tent mallets.
133.	IS : 2990—1965	Dimensions for tenons.
134.	IS : 3087—1965	Wood particle boards.
135.	IS : 3312—1965	Metal shelving cabinets (Adjustable type).
136.	IS : 3314—1965	Metal lockers.
136 A.	IS : 3364—1965	Defects in timber.
137.	IS : 3587—1966	Wood Rasp files.
138.	IS : 3663—1966	Dimensions of tables and chairs.
139.	IS : 3670—1966	Code of practice for construction of timber floors.
140.	IS : 3691—1966	Test chart for wood working Bandsaws.
141.	IS : 3694—1966	Test chart for wood turning lathe.
142.	IS : 3818—1966	Continuous (piano) hinges.
143.	IS : 3845—1966	Code of practice of or joints used in wooden furniture.
144.	IS : 4017—1967	Carpenters squares.
145.	IS : 4019—1967	Firm joint dividers.
146.	IS : 4020—1967	Wooden flush door.
147.	IS : 4021—1967	Timber door, window and ventilator frames
148.	IS : 4057—1967	Carpenter's metal bodied bench planes.
149.	IS : 4095—1967	Carpenters pincers.
150.	IS : 4116—1967	Wooden shelving cabinets (adjustable type).
151.	IS : 4126—1967	Wooden ward robes.
152.	IS : 4189—1967	Firm joint inside and outside calipers.
153.	IS : 4414—1967	Wooden table tops.
154.	IS : 4415—1967	Glossary of terms for wooden furniture.

(1)	(2)	(3)
IS : 4990—1969	Plywood for concrete shuttering work	
IS : 4992—1969	Door handles for mortice locks.	
IS : 5098—1969	Cross cut and rip saws.	
IS : 5099—5106	Twist drills various types.	
A. IS : 5123—1969	Tenon and dovetail saws.	
IS : 5187—1969	Flush bolts.	
IS : 5247—1969	Converted timber (Coniferous) for packing cases crates and light furniture.	
IS : 5248—1969	Teak logs for production of sliced veneers.	
IS : 5312—1969	Single door pattern.	
A IS : 5390—1969	Construction of timber ceiling	
IS : 5416—1969	Wooden chairs.	
IS : 547—1969	Pencil tray (wooden).	
IS : 5418—1969	Wooden folding drawing tables.	
IS : 5419—1969	Wooden scribing table.	
IS : 6184—1971	Dimensions for furniture mirrors.	
IS : 6188—1971	Wooden bedside table.	
IS : 6198—1971	Ladged, braced and battened timber door shutters.	
IS : 6375—1971	Wooden splitting wedges.	
IS : 6546—1972	Claw hammers.	
IS : 6641—1972	Wooden disc for tents.	
IS : 6643—1972	Wooden pins tents.	
IS : 6703—1972	Glossary of wooden packing terms.	
IS : 6729—1972	Wooden paddles.	
IS : 6730—1972	Felt nails.	
IS : 6732—1972	Double point nails.	
IS : 6733—1972	Wall nails and roofing nails.	
IS : 6734—1972	Cut lathe and lathe nails	
IS : 6736—1972	Slotted raised countersunk head wood screws.	

(1)	(2)	(3)
188.	IS : 6760—1972	Slotted Countersunk head wood screws.
189.	IS : 6761—1972	Countersunk head wood screws with hexagon socket.
190.	IS : 7014—1973	Carpenters plane brace.
191.	IS : 7042—1973	Carpenters plain brace.
192.	IS : 7047—1973	Timbers used in instrument Industry.
193.	IS : 7070—1973	Wooden shelving rack (adjustable and non adjustable).
194.	IS : 7177—1974	Centre punch.
195.	IS : 7483—1974	Cross recessed pan head screws
196.	IS : 7485—1974	Cross recessed Countersunk head screws.
197.	IS : 7508—1974	Wooden writing cum dressing table.
198.	IS : 7519—1974	Hammer drive screws (used for permanent fastening of name plates etc).
199.	IS : 15—1956	Seedlac.
200.	IS : 40—1950	Carbon black for paints.
201.	IS : 43—1950	Lamp black for paints
202.	IS : 75—1967	Linseed oil, raw and refined.
203.	IS : 77—1968	Linseed oil boiled, for paint.
204.	IS : 86—1950	Oil base for paints to Indian Standard colours No 101.
205.	IS : 168—1965	Ready mixed paint, quick drying matt, for general purposes, to Indian standard colours.
206.	IS : 169—1950	Ready mixed paint, spraying, quick drying, matt lead-free for general purpose to Indian Standard colours.

(1)	(2)	(3)
209.	IS : 339—1957	Varnish, undercoating, exterior, Synthetic resin.
210.	IS : 340—1952	Varnish, mixing.
211.	IS : 341—1952	Black Japan.
212.	IS : 2538—1963	Test chart for bench grinders.
213.	IS : 2546—1963	Galvanized mild steel fire bucket.
214.	IS : 2681—1964	Non-Ferrous metal sliding door bolts for use with padlocks.
215.	IS : 2700—1964	Code of practice for roofing with wooden shingles.
216.	IS : 3097—1965	Wood practice boards (medium density) for general purposes.
217.	IS : 3364—1965	Methods of measurement and evaluation of defects in timber.
218.	IS : 3843—1966	Steel backflap hinges.
219.	IS : 4057—1967	Spring calipers.
220.	IS : 4083—1967	Spring dividers.
221.	IS : 4561—1968	Part I to Part V, various types of Oil can.
222.	IS : 4834—1968	Veneered wood boards for packing cases.
223.	IS : 5706—1970	Spirit levels for use in precision engineering.
224.	IS : 6234—1971	Portable fire extinguishers, water type, (constant air pressure)
225.	IS : 6891—1973	Brace bits.
226.	IS : 7227—1974	Wood working table Band sawing machine 630 mm.
227.	IS : 7294—1974	Wood working single blade circular saw bench machine 450 mm.
228.	IS : 7296—1974	Wood working Surface planing and thicknessing machine.