

## CARPENTRY AND JOINERY

### STRUCTURE OF THE EXAMINATION

The examination shall comprise three compulsory papers: 1, 2 and 3.

Paper 1: This shall be for forty (40) marks for 45 minutes. There shall be 40 multiple choice questions for candidate to answer all for one (1) mark each.

Paper 2: This shall comprise two sections A and B for 1 hour 30minutes.

Section A: This shall consist of five short structured questions covering the entire syllabus for 30minutes for twenty (20) marks.

Section B: This shall consists of 3 questions out of which candidate willbe expected to answer any two in 1hour.All questions carry equal marks. This section carries forty (40) marks.

Papers 1 and 2 shall be composite.

Paper3: (Practical work)

This shall be practical work which will last for 2hours. There shall be two questions for candidates to answer one each for hundred (100) marks.

A list of materials shall be available to schools not less than two weeks before the paper,for material procurement and preparation.Candidate shall be expected to report at the examination venue for the final construction.

(Alternative to practical)

Council may consider testing candidate using the alternative to practical in the event of constraints of requisite facilities.There shall be two set of compulsory questions for candidates to answer all for hundred (100) marks for 1½hours.These shall be questions testing candidate's real time experience in the workshops on safety use of tools,marking out ,processing parts to specification,materialsuse,etc.Freehand sketches of projects,tools and machines relating to Carpentry and joinery may be required.

### DETAILED SYLLABUS

#### Preliminaries

S/NO.	CONTENT	NOTES
		(i) Safety practices (personnel)

1	<p>Workshop and worksite safety</p> <p>(a) Workshop Rules and Regulation</p> <p>(b) First Aid</p> <p>(c) Worksite Safety</p>	<p>(ii) Safety devices (preventive and protective devices)</p> <p>(iii) Safety rules (machines)</p> <p>(iv) Workshop layout.</p> <p>(iv) Types of first aid materials.</p> <p>(v) Worksite aids e.g. ladder, steps, scaffolding, etc.</p> <p>(vi) Worksite hazards</p> <p>(vii) Safety precautions in worksite.</p>
2	<p>Tools, Machines and Maintenance</p> <p>(a) Hand Tools</p> <p>(b) Portable power tools and maintenance</p> <p>(c) Machines and maintenance</p>	<p>(i) Woodwork hand tools (e.g., cutting tool, drilling tools, measuring and marking out tools, etc)</p> <p>(ii) Types of portable power tools e.g. jigsaw, sanders, portable power saws, etc.</p> <p>(iii) Uses of hand tools and portable power tools.</p> <p>(iv) Maintenance and precautionary measures for hand tools.</p> <p>(v) Sketches of hand tools or portable power tools may be required.</p> <p>(vi) Types and uses of machines in carpentry and joinery workshop.</p>
3	<p>Materials: types and uses of</p> <p>(a) Timber;</p> <p>(b) Adhesives;</p> <p>(c) Ironmongery. e.t.c</p>	<p>(i) Growth and structure of timber.</p> <p>(ii) Conversion, seasoning and uses of timber.</p> <p>(iii) Common defects in timber and their remedies.</p> <p>(iv) Reasons for seasoning timber.</p> <p>(v) Preservation and preservatives.</p> <p>(vi) Veneer and manufactured boards.</p> <p>(vii) Types of adhesives; uses and characteristics (e.g. animal glue, casein glue, ureaformaldehyde).</p> <p>(viii) Types of ironmongery (sketches may be required) e.g. screws, nails, hinges and locks.</p>
		<p>(ix) fixing of hinges and locks (specification for ordering nails may be required).</p>

4	<p>Construction principles and Techniques</p> <p>(a) Timber preparation</p> <p>(b) Joints</p> <p>(c) Doors and windows</p> <p>(d) Form work and centering</p> <p>(e) Estimating and costing</p> <p>(f) Wall paneling, cladding and partitioning</p> <p>(g) Pre-fabricated building</p> <p>(h) Stairs, handrail and balusters</p> <p>(i) Scaffolding and ladder</p> <p>(j) Estimation and costing</p>	<p>(i) Sequence of timber preparation to sizes (plane woodsurface to flatness and edge to planesquareness).</p> <p>(ii) Sketching and developing of working drawing.</p> <p>(iii) Interpreting simple working drawings of wood projects.</p> <p>(iv) Common woodwork joints, construction and uses.</p> <p>(v) Simple project requiring specified joint.</p> <p>(vi) Types of doors and windows.</p> <p>(vii) Types of formworks, identification, construction and uses.</p> <p>(viii) Identification, design or construction of centres for arches.</p> <p>(ix) Purpose of timbering.</p> <p>(x) Cost analysis of simple projects e.g. centre table, stool. Projects may be presented in form of working drawing.</p>
5.	<p>Finishes and Finishing</p> <p>(a) Abrasive</p> <p>(b) Finishes</p> <p>(c) Finishing</p>	<p>Abrading tools</p> <p>(i) Types and grades of abrasives</p> <p>(ii) Uses of abrasives</p> <p>(iii) Selection of grades of abrasives</p> <p>(iv) Types of finishes e.g. varnishing lacquer, paints, etc.</p> <p>(v) Characteristics and application of finishes</p> <p>(vi) Finishing tools – spray gun</p> <p>(vii) Finishing process e.g. scraping, filling, sanding and staining.</p> <p>(viii) Simple project work involving finishing.</p>
6	<p>Business Opportunities in Carpentry and Joinery Trade</p> <p>(a) Furniture making</p> <p>(b) Material supply and merchandising</p> <p>(c) Contract work</p>	<p>(i) Project work with commercial value e.g. dining table, doors, etc.</p> <p>(ii) Description of a standard small scale workshop (layout/equipment).</p> <p>(iii) Project work involving feasibility study reports.</p>

**LIST OF FACILITIES AND MAJOR EQUIPMENT/MATERIALS REQUIRED:**

ITEM NO.	EQUIPMENT	QUANTITY REQUIRED
1.	Standard Workshop with a good layout and ventilation	1
2.	First aid box	1
3.	Chart showing Safety Practices in Carpentry and Joinery Workshop	3
4.	Complete Tool box	3
5.	Work Bench	3
6.	G Clamp or F Clamp	10
7.	Safety Equipment - Fire extinguisher, Fire bucket	1 each
8.	Ratchet Brace or Wheel Brace	2
9.	Hand Vice	10
10.	Bench Vice	6
11.	Rip Saw	5
12.	Panel Saw	5
13.	Crosscut Saw	5
14.	Fret Saw	3
15.	Coping Saw	2
16.	Bow Saw	2
17.	Tenon Saw	10
18.	Dovetail Saw	5
19.	Jack Plane	5
20.	Smooth Plane	5
21.	Plough Plane	2
22.	Rebate Plane	2
23.	Grooving Plane	2
24.	Crow Bar	2
25.	Try Square	5
26.	Mitre Square	3
27.	Sliding Bevel	3
28.	Marking Gauge	3
29.	Mortise Gauge	3
30.	Pincers	2
31.	Tape Rule(Metric)	2
32.	Firmer Chisel	2 Sets
33.	Mortise Chisel	2 Sets
34.	Carving Chisel	2 Sets
35.	Centre bit	2 Sets
36.	Twist bit	2 Sets
37.	Drill bit	2 Sets
38.	Star screw driver	2 Sets
39.	Long-nose pliers	2

40.	Combination plier (flat-nose)	2
41.	Flat screw driver	2 Sets
42.	Spoke shave	2
43.	Claw Hammer	2
44.	Cross Pein Hammer	2
45.	Ball Pein Hammer	2
46.	Scriber	2
47.	Steel rule	2
48.	Inside caliper	1
49.	Outside caliper	1
50.	Allen key	1 Set

### LIST OF RECOMMENDED TEXT BOOKS

S/N	TEXT BOOK	AUTHOR
1	BRIAN PORTER & CHRISTOPHER TOOKE 3 <sup>rd</sup> Edition (Bks 1,2 and 3)	
2	WOOD TRADES (Part 1 and 2)	A.Y.EMARY
3	CARPENTRY AND JOINERY (Bks 1 and 2)	DAVID R.BATES
4	THE THEORY AND PRACTICAL OF WOODWORK 3 <sup>rd</sup> Edition	GEORGE LOVE
5	JOINERY	W.B.MACKAY
6	CARPENTRY	W.B.MACKAY
7	CARPENTRY AND JOINERY (Bks 1,2 and 3)	R.BAYLISS
8	WOODWORK IN THEORY AND PRACTICAL	JOHN A.WARTOR