

CHRISTIAN SOCIAL SERVICES COMMISSION (CSSC)
NORTHERN ZONE JOINT EXAMINATIONS SYNDICATE (NZ-JES)



FORM TWO PRE-NATIONAL ASSESSMENT AUG 2025
CARPENTRY AND JOINERY- **MARKING SCHEME**

SECTION A (15 MARKS)

1. Question

i.	ii.	iii.	iv.	v.	vi.	vii.	viii.	ix.	(x)
C	D	A	B	A	C	A	A	B	B

2. Question

List A	i.	ii.	(iii)	iv.	(v)
List B	B	D	A	E	C

SECTION B (70 MARKS) Answer all questions.

3. a) Soft and hard wood char (five points each).

Sn	Hard wood	Soft wood
1	Dark color timber	Light color timber
2	Shed leaves annually	Ever green leaves
3	Broad leaves	Needle/narrow leaves
4	Wide crown	Narrow crown

5	Deep root	Shallow roots
6	Flowering trees	Non flowering trees

4. Three Conversion of timber logs

i) **Live sawing (through and through sawing)** – is the simplest and more economical method due to little waste.

ii) **Quarter or radial sawing:** This is done parallel to medullary rays. Timber found in this method, warping is less, conversion take long time and waste is more. The method is mostly used for hard timber.

iii) **Back or Tangential sawing:** this is done at right angles to the medulla rays and tangential to the annual rings.

a) **Two (2) pressure methods of applying preservatives.**

i) **Double-vacuum process**

ii) **Empty – cell (Lowry) process**

iii) **Full – cell process**

5. Woodwork joints are mainly used whenever constructing a furniture, buildings or any timber works.

(i) Mention two (2) types of lengthening joint.

i) **Butt joints**

ii) **Scarf joints**

iii) **Lap joints**

iv) **Half – lap joint**

(ii) Analyze three (3) wood preservatives that can be used in order to maintain the quality of timber free from insects.

i) **Organic – solvent preservatives**

ii) **Water – borne preservative**

iii) **Tar – oil preservatives.**

6. Personal safety rules during construction of wood work and painting activities is very important to be considered:

(a) Analyze five (5) hand tools safety when carrying and storing hand tools.

i) Do not carry many tools at ones

ii) Do not carry sharp object in your apron or pocket

iii) Store tools in toll kit or correct places

iv) When carry sharp edge or pointed tool such as chisels, hold them close to your body and pointed down to the floor

v) When passing sharp object to your fellow pass them handle first.

7. Roof is the uppermost part of the building.

(a) Briefly explain five (5) roofing terminologies

i) Pitch of the roof

is the steepness or angel of the roofs slope. **Or**

the inclination of the side of the roof to the horizontal plane.

ii) Tie beam

This is a horizontal member of the truss spanning between two rafters.

iii) Rafters

this is an inclined wooden member running from the ridge to eaves.

iv) Eaves

is defined as the bottom end of the roof where it meets the wall.

v) Ridge

is a horizontal wooden member in form of the beam or board provided at the apex of the roof truss to support the rafter fixed to it.

8. In one of the carpentry workshops during practical work, injury to humans, damage to machines tools and equipment may result due to accidents.

(a) Analyze five (5) causes of accident that may occurring in Carpentry and Joinery workshop

i) lack of knowledge regarding the use of hand tools, machines, and equipment as well as safety guidelines

ii) Poor working condition

iii) Inappropriate method of operation

iv) Improper use of tools

v) Fatigue

vi) Hazardous materials at workplace

vii) Poor planning and execution of work

9. Personal protective equipment (PPE) should be taken to ensure good condition of the people in the working places.

(a) Explain five (5) types of safety gears that were designed to protect parts of the body that acts as a primary barrier between the hazards and the workers

i) Safety helmet – used to protect head from the falling objects, impact or electrical hazards.

ii) Safety glasses – this are used to protect eye from injury of foreign objects such as sawdust, splash of chemical etc

iii) Ear muff/plug – this help in hearing protection against loud noise that can damage your hearing such as machine with high noise level.

iv) Disposable masks or respirators – used to filter the air to prevent inhalation of harmful particles, dust, fumes or gases.

v) Gloves – protects hands from cuts, punctures, chemical exposure, thermal hazards or electrical risks.

vi) Foot protection or shoes – Safety boots provide protection against falling objects, compression hazards, punctures, electrical risks or slippery surfaces.

vii) Body protection – shield the body from chemical splashes, heat, flames, biological hazards, abrasive materials, high visibility vest (reflectors jackets)

SECTION C (15 MARKS)

Answer question number ten (10)

10. Length of the common rafter.

Given data:

Run 4m

Rise 3m

Therefore use = Rafter length (RL) = $\sqrt{(\text{Run})^2 + (\text{Rise})^2}$

$$\text{Rafter length (RL)} = \sqrt{4\text{m}^2 + 3\text{m}^2}$$

$$\text{Rafter length (RL)} = \sqrt{16 + 9}$$

$$\text{Rafter Length (RL)} = \sqrt{25}$$

$$\text{RL} = 5\text{m}$$

The length of the common rafter is 5meters long.