

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



**FORM FOUR PRE NATIONAL EXAMINATION AUGUST 2024
WOODWORK AND PAINTING ENGINEERING.**

074

MARKING SCHEMES

1. SECTION A (15 MARKS)

I	ii	iii	iv	v	vi	vii	viii	ix	x
A	D	B	A	E	A	C	D	B	B

Question 2 Matching item

i	ii	iii	iv	v

SECTION B (40 Marks)

Answer **all** questions in this section.

3. Manufactured boards are man-made boards from timber waste and glued by using adhesives. Explain the main uses of each of the following manufactured boards below.
 - i) Hard board**
 - Are made of sugarcane pulp or wood waste which are compressed together.
 - They are used for ceiling finish, wall partition
 - Available size are 1220mm wide x 2440mm length
 - ii) Block board**
 - Consist of large wood strip, glued together or sandwiched between two thin outer layers of wood

and faced on both sides with one or more veneer
-suitable for outdoors use
-used for interior shelves, doors, and paneling.
The minimum size is 13mm thick.

iii) Gypsum boards

are the boards which are made up in sedimentary rock formation in a crystalline form known as calcium sulphate dehydrate.

is boards used for interior walls, Suspended ceilings, dry walls partition and ceiling.

(3 Marks)

b) Construction sizes are **1220mm wide x 2440mm length**

(2 Marks)

4. Aided with neatly labeled sketches explain the following types of doors:

a) Ledged, braced and framed battened doors



b) Ledged, braced, and battened doors.

(4 Marks)

5. a) **What is partition?**

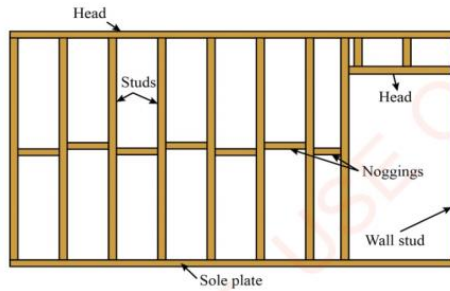
Are permanent or temporary thin interior walls which are constructed in a building to separate space.

Consist of a wooden framed work which is properly supported on the floor and fixed to the side of the wall.

(2 Marks)

b) Make a sketch of stud timber partition and show the following parts.

- i) Studs
- ii) Staggered nogging pieces
- iii) Fillet



(3 Marks)

6. All buildings or houses in our surroundings are covered on top to protect people or properties inside.

a) Define the following terms

(4 Marks)

i) **Roof** is the topmost covering of a building which provide protection against weather elements such as rain, snow, sunlight, wind and extremes temperature.

Also room provide security, privacy and insulation.

ii) **Common rafter** – These are long wooden boards used for the frame of the roof set at right angle sloping from the wall plate and rises to the ridge board.

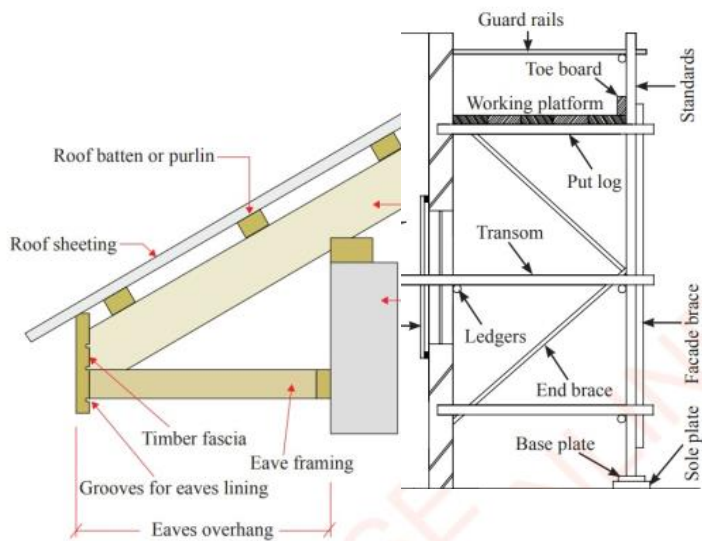
iii) **Hip rafter** – This is the rafter extending from the wall plate to the ridge and forms the angle of the building (hip of roof).

iv) **Valley rafter** – This is the point where inclined two roof surfaces meet over an internal angle.

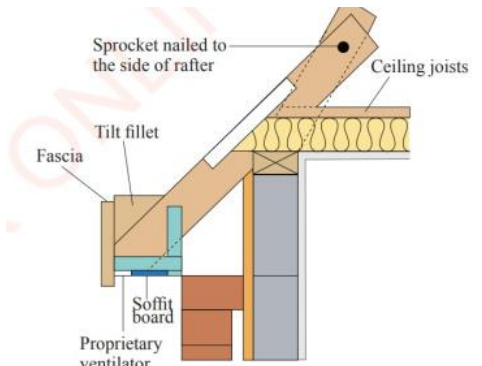
b) **four (4) essential functional requirements of a good roof**

1. Weather resistance
2. Strength and stability
3. Thermal insulation
4. Sound insulation
5. Fire resistance

(4Marks)



7. The overhang portion of the feet of the rafter (eaves) can be treated in



several ways. With the aid of sketches, show the two different ways used to treat the rafter at the end. **(4 Marks)**

8. **Preservatives into non-pressure method**

1. Brushing method- stressing
2. Spraying method
3. Dipping method

two into pressure method.

1. Air tight chamber with creosote.

(5 Marks)

9. a) **timbering to trenches.**

Is the provision of timber boards and struts to give temporary support to the sides of the trench due to unstable soil or deep trenches.

b) **Reason of timbering to trenches(3)**

1. Nature of the soil to be supported
2. Surrounding activities near the trenches
3. Depth of the foundation trench
4. Length of time needed for the trench to remain open.
5. Quantity of timbering material available

(5 Marks)

10. a) **Scaffold.**

Are temporary structure erected to enable building operatives to have easy and safe working platform for themselves and for their materials.

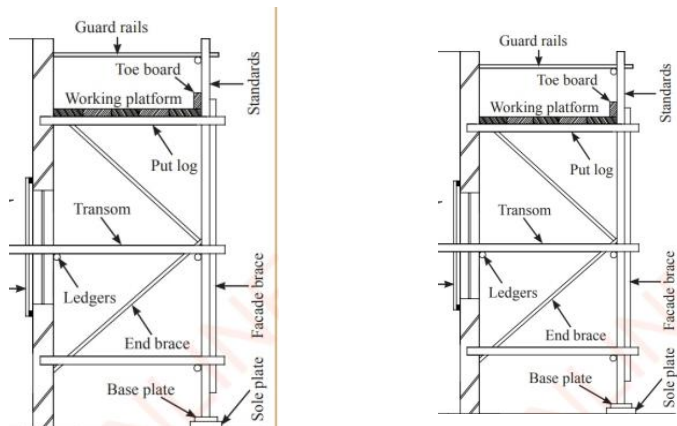
b) Two types of scaffolds

i) **Put log or dependent scaffold**

this consist of a single framework of standards constructed parallel to the wall and connected by

ledgers.

ii) Independent scaffold

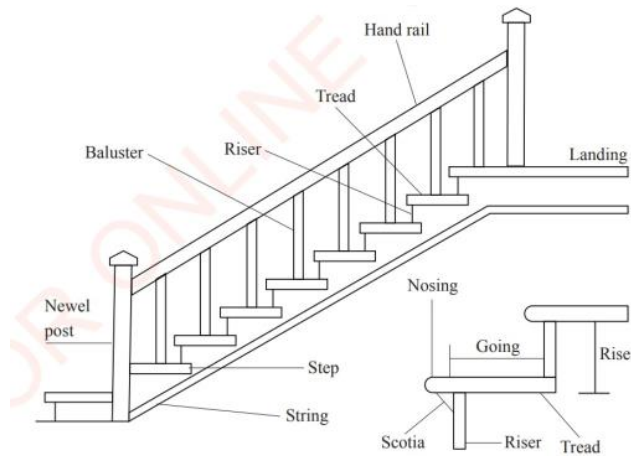


This consist of two rows of standards and it is stronger than putlog

(4 Marks)

SECTION C (45 Marks)

Answer **three (3)** questions from this section.



- 11. i) Tread -
- ii) Nosing -
- iii) Stringer -
- iv) Riser -
- v) Going -

b) Wooden stairs are classified based on the layout. Mention five classes of wooden stairs.

- c) Clearly explain the functional requirements of wooden stairs.
12. Ceiling adds beauty and protection to the roof soffit. During construction of timber ceiling framework, there are two systems such as structural framework and finishing or covering parts. Briefly give the short notes on four parts of timber ceiling framework.
13. a) With the aid of a well labeled diagram, describe the parts of the combination of king and queen post truss roof.
- b) With the aid of sketches, describe four types of single roof trusses.
- c) Explain three types of thatch coverings as used in roofing.
14. a) Analyze at least four functions of windows in a house
b) Draw a fixed glass window and state how is it used.
c) Mention any four parts of Casement window.
d) What is the difference between carpenter installation and masonry installation of the window?
15. You have been assigned a task of constructing windows for Jitegemee secondary school classrooms. Before the construction, you are advised to visit for measurements and type of windows that are appropriate.
- a) Briefly give the concept of Window
b) Mention functions of windows in buildings. Give four function
c) Analyze five types of wooden windows according to the way of opening.
16. a) Explain the difference between Sap wood and True wood with the aid of sketches.
- b) Properties are characteristics which something owns on its existence. Analyze five point from Soft wood trees properties and five from hard wood trees properties
- b) After felling down trees, the process of converting timber into pieces continues for other uses. Due to the requirements of the market size, the millers have to sawn the logs through different methods to obtain timber. Briefly explain any three methods of converting timber