higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

AUGUST EXAMINATION

WOODWORKERS' THEORY N1

21 JULY 2014

This marking guideline consists of 6 pages.

Copyright reserved

QUESTION 1

1.1 1.1.1 A joiner is a tradesperson who specialises in solid doors, window frames and staircases.

1.1.2 A plumber is a tradesperson who specialises in installation and repair of pipes used to carry water, sewage and wastewater.

1.1.3 A painter is a tradesperson who applies paint to the walls and ceilings of a house.

1.1.4 A carpenter is a tradesperson whose main duties are to construct the woodworking or timber part of a building under construction.

1.1.5 A shop fitter is a tradesperson who does the installation of shop fronts to shops and offices as well as fitting out of shops and offices with display units, furniture and counters. (5 x 1) (5)

1.2
- A road is a smooth hard surface√ that is built to pass through hills, valleys, through mountain passes and tunnels.√
- A bridge can be described as a continuous road surface,√ to allow vehicles to pass over a river or deep valley (gorge).√ (4)

1.3 1.3.1 Process layout and methods: An unorganised layout can lead to a bottle neck of events hindering the flow of work,√ while good organizations can speed up the performance.√

1.3.2 Product or services of design: Some things are easier to make√ or to deliver than others.√

1.3.3 Plant and equipment: Up-to-date and well maintained facilities and equipment√ make a big difference in productivity.√

(3 x 2) (6)
[15]

Copyright reserved

QUESTION 2

2.1 Unsafe acts:

- working at a unsafe speed
- working without authority
- using equipment without training
- failing to use equipment correctly
- not using safety devices correctly
- unsafe stacking and storing
- using the wrong tools to operate equipment
- working or being in an unsafe position
- adjusting, cleaning or working on moving machinery
- not following procedures i.e. taking chances
- not using lock – outs
- playing around – horseplay
- not using personal protective equipment

(Any 3 x 1) (3)

Unsafe conditions:

- unsafe design or manufacture
- poor planning and/or housekeeping
- lack of guards or lock – outs
- inadequate guards
- poor ergonomics
- lack of pollution controls
- poor lighting
- poor ventilation
- lack of preventative maintenance
- failure to identify hazards
- lack of signage, demarcation or poor layout
- unsafe construction
- overcrowding at work stations
- inadequate storage space
- Poorly maintained tools and other equipment (Any 3 x 1) (3)

2.2 2.2.1 True

2.2.2 False

2.2.3 False

2.2.4 False

2.2.5 True

2.2.6 True

(6 x 1) (6)

Copyright reserved

2.3
- Openings must be adequately enclosed with suitable guards or rails.
- On a construction site a catch net or platform must be erected over an entrance or passageway where employers work or public pass.
- When work is carried out at a height of more than 2 meters above the ground, toe boards of at least 100 mm high should be fitted in such a way that no open space exists between the toe board and the floor level. (3)

[15]

QUESTION 3

3.1
- Wet timber is prone to attack by beetles, fungi and wet rot.
- Wet timber crack and warp.
- It is not as strong and stable as dry timber.
- Joints will open up as the wood dries out.
- Glue will not adhere to wet timber.
- It is impossible to obtain a smooth surface with wet timber..
- Furniture made of wet timber will pull apart as the timber dries out.
- Wet timber cannot be painted or polished.
- Furniture made of wet timber will be heavy.
- It is very difficult to work with wet timber. (Any 3 x 1) (3)

3.2
- Large stacks require large areas.
- The process is very slow.
- It is an expensive method as the wood can only be converted into money after a long drying process.
- There can be no control over the moisture content.
- The wood can be attacked by fungi and pest while drying. (Any 4 x 1) (4)

3.3
- Natural forces such as lighting and strong winds.
- Defective seasoning and conversion.
- Attack by fungi and insects. (Any 2 x 1) (2)

3.4 3.4.1 Chipboard is made from waste wood which is shredded into small pieces,√ mixed with special glue and pressed together.√
It is used for shelving, cupboards side, tops for small tables.√

3.4.2 Block board is strips forming the core and are more or less square.√ It is covered with two layers of veneer.√
It is used for cupboard doors, table tops, cupboard sides and all kinds of furniture.√

3.4.3 Laminated board is strips of cheap wood, glued together to form a panel. √The two faces of the panel are covered with either veneer or plywood.√
It is used cupboard doors, cupboard sides and as a group work for veneering.√ (3 x 3) (9)

3.5 Thermosetting plastics√ and thermoplastics√ (2)

[20]

Copyright reserved

QUESTION 4

4.1
- Tape measure
- Jack plane
- Skill saw/crosscut saw
- Firmer chisel
- Wooden mallet
- Hand drill/brace
- Reversible drill/screw drivers
- Mitre square
- Butt gauge
- Bradawl
- Paring chisels

(Any 5 x 1) (5)

4.2

4.2.1	C
4.2.2	B
4.2.3	A
4.2.4	A
4.2.5	C
4.2.6	B

(6 x 1) (6)

4.3
- Cutting of internal and external curves
- Cutting of circular holes
- Cutting of square and rectangular holes
- Shaping of edges
- Cutting of slots

(Any 4 x 1) (4)
[15]

QUESTION 5

5.1

5.1.1 Mortise lock√ – is used for internal and external doors.√

5.1.2 Sinkless hinge√ – is used as a light weight butt hinge for internal wooden and aluminium doors.√

5.1.3 Floor nail√ – is used for nailing floor boards to floor joist.√

5.1.4 Countersunk or flat head screw√– is used for general woodworking or where the screw is driven until the head is flush with the wood.√

5.1.5 Expansion bolt√ – is used for fixing structural sections to concrete, staircase balustrades and sign boards.√

5.1.6 Lamello biscuit√ – is used to join two or more plank parallel to one another.√

(6 x 2) (12)

Copyright reserved

5.2
- It is suitable for indoor and outdoor use and it is highly durable.
- Some brands of polyurethane adhesive, guarantees the bond to last as long as the materials are being joined together.
- It is applied straight from the container and does n't need to be mixed.
- Most varieties of polyurethane glue can be painted over.
- The strong adhesive factor stems from its foaming action, as it expands when.
- It only expands when it cures and comes in contact with moisture.

(Any 3 x 1) (3)
[15]

QUESTION 6

6.1 Tee half – lapped joint√ – is used to construct light frame work for cupboard frames.√

6.2 Mitre joint√ – is used to join wood for internal and external corners for picture frame, architraves and skirting etc.√

6.3 Through housing joint√ – is used to join shelves with the sides of a bookcase.√

6.4 Draw dovetail joint√– is used to joint the side and fronts of a draw.√

6.5 Haunched mortise and tenon joint√– is used for the making of solid doors, window frames, and chairs.√

(5 x 2) **[10]**

QUESTION 7

7.1 $$\text{Percentage moisture} = \frac{\text{wet wood} - \text{dry wood}\surd}{\text{dry wood}}$$
$$= \frac{270 - 190\ g\surd}{190\ g}$$
$$= 42.10\%\surd$$ (3)

7.2 Percentage profit = 100 – 48 – 37
= 15%√

$$\text{Material cost} = \frac{37\ \%\surd}{100}$$
= 0.37 x R15 000,00√
= R5 550,00√

$$\text{Profit} = \frac{15\ \%\surd}{100}$$
= 0.15 x R15 000,00√
= R2 250,00√ (7)
[10]

TOTAL: 100

Copyright reserved