higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

APRIL EXAMINATION

WOODWORKERS' THEORY N1

16 APRIL 2015

This marking guideline consists of 7 pages.

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QUESTION 1: INTRODUCTION TO THE BUILDING INDUSTRY AND PRODUCTIVITY

1.1 1.1.1 A bricklayer is a tradesman who builds the superstructure of a house out of bricks.√

1.1.2 A plasterer is a tradesman who applies a layer of mortar to the surface of a vertical wall.√

1.1.3 A tiler is a tradesman who applies ceramic and natural clay tiles to the surfaces of walls and floors.√

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

1.1.5 A plumber is a tradesman who specializes in the installation and repair of pipes used to carry water, sewage and wastewater.√

(5 × 1) (5)

1.2 A single-storey building can be described as a building with only one floor or storey√√ and a multi-storey building can be describe as a building with two or more floors.√√ (4)

1.3 INCOME:

- Day works
- Preliminaries
- Provisional sum
- Increased cost
- Variations speculation
- Contract building
- Sub-contractors developing (Any3 × 1) (3)

EXPENDITURE:

- Plant changes
- Site overheads
- Material invoice
- Sub-contractors account
- Office overheads
- Salaries
- Accidents
- Tools (Any 3 × 1) (3)

[15]

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QUESTION 2: SAFETY AND HOUSEKEEPING

2.1 An incident is the occurrence of an undesirable event√ which causes, or could cause injury, illness, or diseases to people√ or damage to plant, equipment, or the interruption of business operations.√ (3)

2.2 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.
- Unsafe conditions.

(Any 3 × 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 × 1) (3)

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2.3
- Avoid bringing metal or alloy ladders into contact with electrical supply sources
- Place the ladders so that its feet are a quarter of its length away from the surface it is resting against.
- Unless the ladder is secured at the top, it should always be held in position by another person if someone is standing on it.
- Wherever it should extend a 1 meter or at least three rungs above its top support.
- Do not use ladders horizontally as walkways or scaffold.
- Tools and equipment should be hauled up by rope.
- Never place a ladder in front of an unlock door.
- Only one person should be on a ladder at any one time and both hands should be used for climbing. . (Any 4 × 1) (4)

2.4
- 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.

(Any 2 × 1) (2)
[15]

QUESTION 3: TIMBER, TIMBER PRODUCTS, METAL AND GLASS

3.1
- Full cell method or bethel process
- Empty cell method
- Superficial method (3)

3.2
- 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.
- Iit 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 5 × 1) (5)

3.3 Tempered and untempered. (2)

3.4 3.4.1 Steel – door frames, window frames, reinforcement. (Any 1 × 1) (1)

3.4.2 Cast iron – drain pipes, manhole lids. (Any 1 × 1) (1)

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3.4.3 Aluminium – window frames, sliding doors, gutters, flashing. (Any 1 × 1) (1)

3.4.4 Copper – water pipes, flashing, geyser tanks. (Any 1 × 1) (1)

3.5 3.5.1 Characteristics:
- Fine spores form over the wood and is spread over the surface.
- It can be blown over great distances.
- Even humans can spread this decease.
- It's highly contagious and dangerous. (Any 2 × 1) (2)

3.5.2 Causes:
- It is caused by fungi that thrive in wet, warm√ and unventilated conditions.√ (2)

3.5.3 Prevention:
- It can be prevented by providing adequate ventilation and bringing the moisture condition to less than 20%.
- The wood can also be treated with sodium floride against further attacks. (2)

[20]

QUESTION 4: TOOLS AND MACHINES

4.1.1 4.1.1 Adjusting screw

4.1.2 Stem

4.1.3 Stock

4.1.4 Cutter or pin (4 × 1) (4)

4.2 4.2.1 False

4.2.2 False

4.2.3 True

4.2.4 False

4.2.5 True (5 × 1) (5)

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4.3 4.3.1 Router√ – is used to cut various grooves and mouldings into wood.√

4.3.2 Jigsaw√ – is used to cut slots, curves and circles into a piece of wood and metal√

4.3.3 Portable drill√ – is used for drilling holes in wood and metal.√

(3 × 2) (6)
[15]

QUESTION 5: FIXATIVES, GLUE AND FITTINGS

5.1
- Length of the screw.
- Thickness (size)
- Number (quantity) required
- Metal made from
- Kind of head (4)

5.2
- The glue does not discolor the wood
- No water or thinners added
- Surplus glue can be removed with a damp cloth
- Glue has a long shelf life
- No accelerator or hardener needed
- A delay during the glueing will not interfere with the adherence ability of the glue. (4)

5.3. 5.3.1 Mortise lock

5.3.2 Hasp and staple

5.3.3 Dead lock

5.3.4 Box lock

5.3.5 Casement or fanlight stay

5.3.6 Fanlight fastener

5.3.7 Tee hinge

(7 × 1) (7)
[15]

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QUESTION 6: JOINTS

6.1. 6.1.1 To join frames at corners e.g. screen doors

6.1.2 To join table rails and heavy door frame.

6.1.3 To join the back of drawer sides and knife boxes.

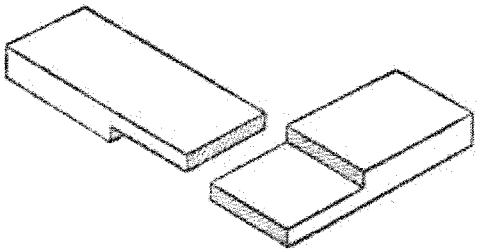
6.1.4 To join picture frames, internal and external corners

6.1.5 To join two or more planks parallel to one another.

(5 × 1) (5)

6.2

MARK ALLOCATION	
correct interpretation	2
drawing of the joint	2
neatness	1
TOTAL	5



(5)
[10]

QUESTION 7: BUILDING – RELATED CALCULATIONS

7.1 Cost of melamine: R65,00 per m² × 10 m² = R650,00√√ (2)

7.2 Cost to do the work:
R25,00 + R9,50 per hour = R34,50√√
R34.50 × 12 hours = R414,00√√ (4)

7.3 R650,00 + R414.00 + R55.00 = R1119.00√
Percentage profit 14% = R1119.00 × 0.14% = R156.66√
Total price of the cupboard: R1119,00 + R156,66 = R1275,66√√ (4)
[10]

TOTAL : [100]

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