higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

RIGGING THEORY N1

8 AUGUST 2019

This marking guideline consists of 6 pages.

Copyright reserved

QUESTION 1

1.1
1.1.1 False
1.1.2 True
1.1.3 True
1.1.4 False
1.1.5 False
1.1.6 True
1.1.7 True
1.1.8 True
1.1.9 True
1.1.10 True

(10 × 1) (10)

1.2
- Do not tamper with the electricity.
- Do not use the electrical equipment if it is not properly earthed. (2 × 1) (2)

1.3
- Do not play with compressed air because small items and dust are dangerously accelerated by the compressed air.
- Be aware of hoses running across the floor.
- Do not leave compressed air valves open after use. (3 × 1) (3)

[15]

QUESTION 2

2.1
2.1.1 Used for cutting off excess steel ropes

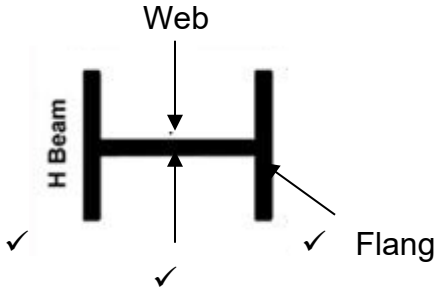
2.1.2 May be used for finishing or wedging a splice

2.1.3 Used to cut metal while it is cold

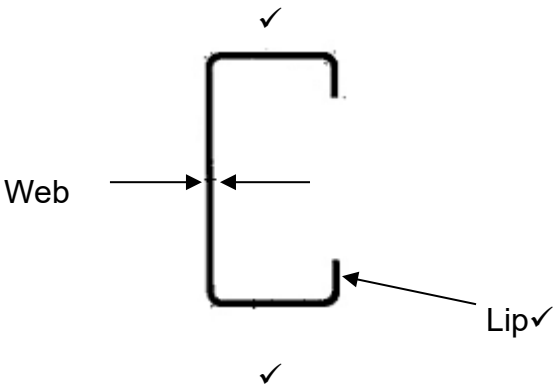
(3 × 2) (6)

2.2
- Brittle
- Relatively weak tension
- Soft because of carbon content present as graphite
- Heavy
- Ability to fracture with shock or bending (Any 3 × 1) (3)

2.3 2.3.1 H-BEAM



2.3.2 LIPPED CHANNEL



(2 × 3) (6)
[15]

QUESTION 3

3.1 3.1.1 Out-riggers scaffolding (1)

3.1.2
- The two beams are clamped to the building as shown in the sectional sketch.
- The platform is mounted on the beams.
- The hand railings are mounted on the beams.
- The support beams are mounted to strengthen the scaffolding. (4)

3.2 3.2.1 The brace is a diagonal tie to prevent distortion and the collapse of the structure.

3.2.2 The bracket of a scaffold is supported by means of ropes passing over the ridge and secured with hooks to the ridge of the roof.

3.2.3 The bridle is a horizontal member, between two putlogs, for supporting intermediate putlogs that cannot be supported in the wall, for example at windows openings.

(3 × 2) (6)

3.3 3.3.1 Widely used on pallets and such like to retard dimensional instability caused by too rapid drying

3.3.2 May be diluted and used to protect timber against fungi and vermin, particularly termites

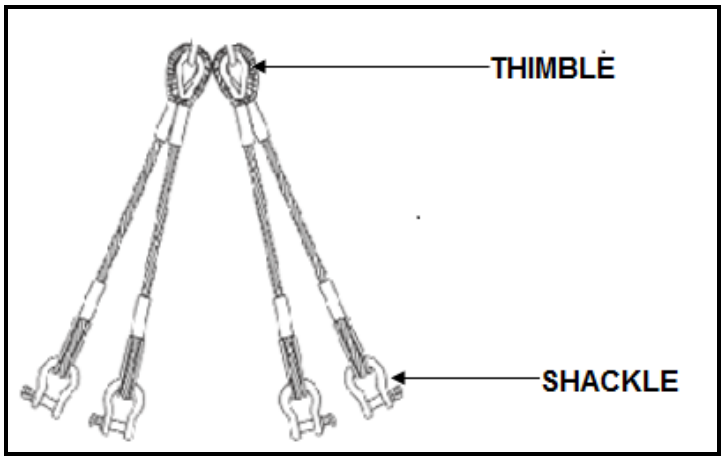
(2 × 2) (4)
[15]

QUESTION 4

4.1 4.1.1 Double-choker sliding hook sling (1)

4.1.2 A – Ring
B – Ferrule
C – Sling
D – Sliding hook
E – Loop (5)

4.2



(4)

4.3 Ropes should be paid out, without slack, from a reel in a straight line to prevent the possibility of kinking or disturbance to the lay of the rope. (3)

4.4
- Nylon
- Orion
- Fibre-glass
- Saran
- Polyester
- Polypropylene
- Polyethylene (Any 5 × 1) (5)

4.5
- Rusts and weakens
- Loses natural form
- Becomes brittle and weak
- Shortened life span (Any 2 × 1) (2)

[20]

QUESTION 5

5.1 5.1.1 $\text{Force} = \text{mass} \times \text{gravity}$
$= 465\ \text{kg} \times 9{,}81\ \text{m}/s^2$✓
$= 4561{,}65\ N$✓✓

5.1.2 $\text{Work} = \text{Force} \times \text{distance moved}$
$= 4561{,}65\ N \times 150\ m$✓
$= 684247{,}5$ Nm✓✓

(2 × 3) (6)

5.2 5.2.1 Wire or fibre ropes made into forms with or without fittings for handling loads, permitting the attachment of an operating rope (2)

5.2.2 Arrangement of wires helically laid about an axis, or another wire or fibre center to produce a symmetrical section (2)

5.2.3 Type of wire rope fitting employing white metal to fix the rope into the basket of the socket (2)

5.2.4 Suspended wire rope or strand along which the carrier moves on an aerial conveyor (2)

5.2.5 Grooved metal fitting to protect the eye of a wire rope (1)

[15]

QUESTION 6

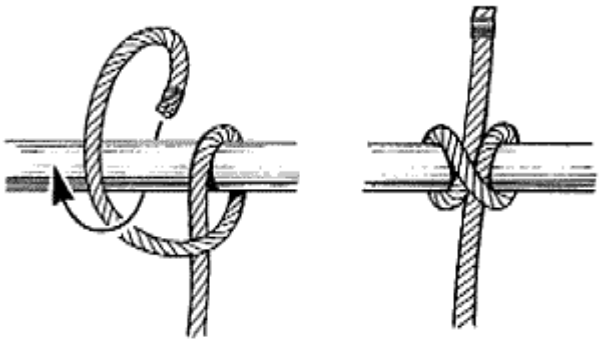
6.1 6.1.1 A – Black
B – Maroon
C – Silver or blue (3)

6.1.2. A – Right-hand thread
B – Left-hand thread
C – Left-hand thread (3)

6.1.3
- So that the hose cannot be connected to the wrong bottle
- Wrong connection may cause an explosion (1)

6.2
- Nozzle too close to workpiece
- Dirty nozzle
- Incorrect gas mixture
- Loose nozzle (4)

6.3



Clove Hitch (3)

6.4 6.4.1 The short length at either end of a rope, which may be formed into an eye, or used for making a bend or a hitch with which to secure it. The end of a rope is also that length of rope left over after making such an eye, bend or hitch. The bare end or fag end is the extreme end of a length of rope.

6.4.2 Used to fasten two ropes or two parts of the same rope securely together to prevent them moving in relation to each other

6.4.3 Light fastening for temporarily holding in place a rope or any other object. Not meant to bear any strain other than that required to keep the rope or other objects in place

(3 × 2) (6)
[20]

TOTAL: 100

Copyright reserved