higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

NOVEMBER EXAMINATION

MANUAL MANUFACTURING
NQF LEVEL 2

24 NOVEMBER 2015

This marking guideline consists of 6 pages.

QUESTION 1

1.1
- Informing management or supervisor about hazards/dangers
- Placing signage where necessary
- Contacting security or maintenance for issues related to the threats and/or possible dangers in the workplace
- Pointing out the potential danger to colleagues or visitors (4)

1.2
- Running and playing in the work shop should be avoided
- Any spilled liquid should be cleaned without delay
- Compressed air should be handled with care.
- The correct tools should be used for a job.
- A proper hand cleaner as well as a hand barrier cream should be used.
- Clean overalls should be worn. (Any 5 x 1) (5)

1.3
1.3.1 True
1.3.2 False
1.3.3 True
1.3.4 False
1.3.5 True (5 x 1) (5)

1.4 Atmospheric Pollution Prevention Act No. 45 of 1965 (1)

[15]

QUESTION 2

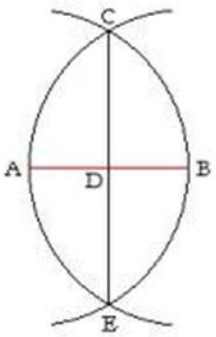
2.1
2.1.1 language; communicate (2)

2.1.2 mental picture of what (1)

2.1.3 units of measurement (1)

2.1.4 design problems (1)

2.2 Using points A and B as the centres, describe two arcs of equal radius R; the arcs must intersect each other.
Draw a line through the intersection of the two arcs to cross line AB



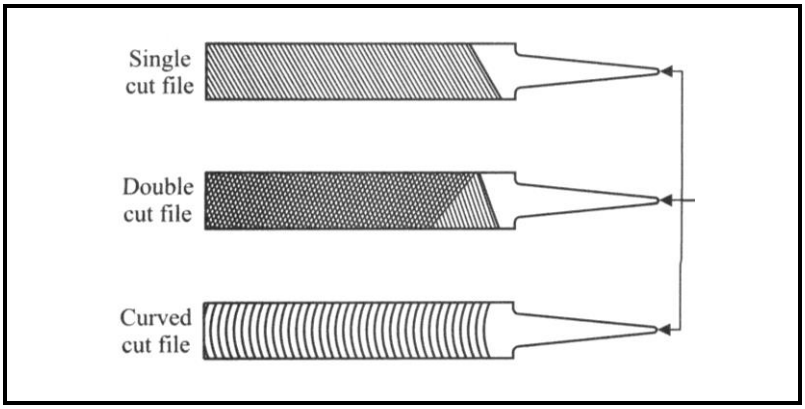
(5)

[10]

QUESTION 3

3.1
- The shape of a work piece
- The permissible pressure which can be exercised by the clamp
- The rigidity of the work piece
- The amount of pressure exerted by the cutting or forming process and the ease of locating and removing the clamps (5)

3.2



(6)

3.3 Vernier height gauge (1)

3.1 Main scale
3.2 Vernier scale
3.3 Moving scale
3.4 Column
3.5 Base
3.6 Tungsten tip
3.7 Scriber (7 x 1) (7)

3.4
- Wear safety goggles when using a chisel.
- Select a chisel that is large enough for the task.
- Use a hammer that matches the chisel being used.
- Do not use a chisel that has a mushroomed head.
- Sharpen chisels when they become blunt.
- Sharpen the cutting angle of a chisel according to the material for which the chisel is to be used.
- The chisel head must be kept free from oil and grease.
- Work away from the body. (Any 6 x 1) (6)

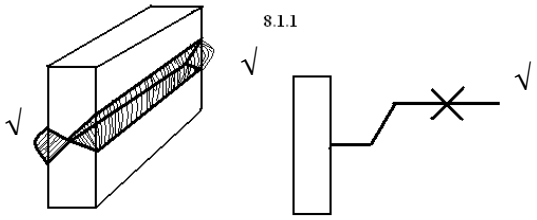
3.5 The purpose of marking out is to transfer lines from a drawing to a work piece (2)

3.6
- Do not drop this instrument and do not handle it roughly.
- Prevent damage to any of the surfaces of the gauge.
- Keep the gauge oiled lightly to prevent rust forming.
- Store the instrument in its original box. (3)

[30]

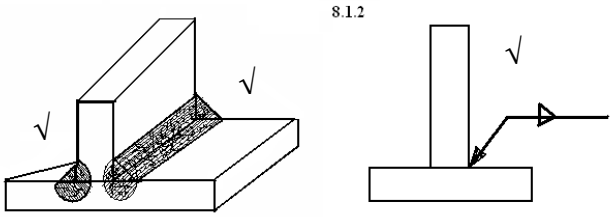
QUESTION 4

4.1 4.1.1 Double v butt weld



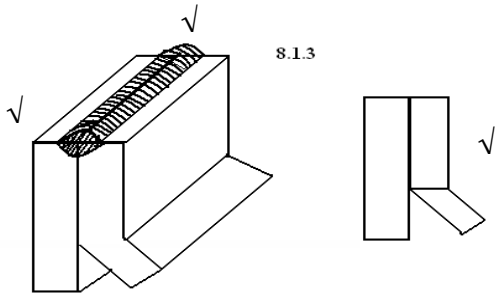
(3)

4.1.2 Double fillet weld



(3)

4.1.3 Edge weld

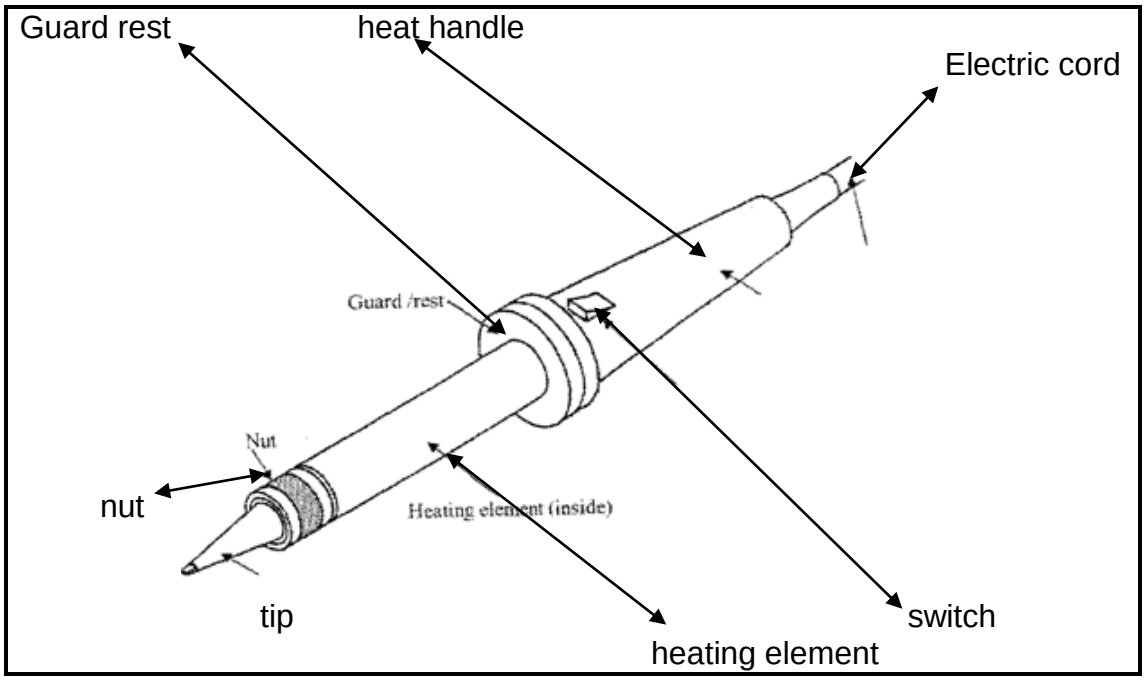


(3)

4.2
- Semi-permanent patch works.
- Setting jewellery components.
- Making copper pipe connections.
- Doing sheet metal objects joints.
- Assembling electronic components to printed circuit boards (PCBs).
- Fixing or connecting small mechanical parts.
- Stained glass work for joining copper foil and lead to form a frame for the glass layout.
- Joining of electrical cables.

(4)

4.3



(7)

4.5 4.5.1 False
4.5.2 True

(2 x 1) (2)

4.6
- Oxidising.
- Carburising.
- Neutral

(3)

[25]

QUESTION 5

5.1

Method	Cast iron	Mild steel	Cast steel	High-speed steel
Sound test	Dull sound	Slightly higher ring	High ring	Very clear high ring
Spark test	Yellow torpedo sparks with feathery tail	Stream of long white sparks	Brushy spark stream with secondary test's burst	Dull red broken line of sparks
Fracture test	Grey crystalline	Light grey medium crystalline	Very fine crystalline structure	Light grey fine crystalline
Machine test	Cuts easily/ black curly swarf	Cuts easily white curly swarf	Shavings break into short pieces	Cuts fairly easily long swarf

(Any TWO tests and FOUR differences; 4 x 2 + 2) (10)

5.2 5.2.1 To ensure that safety procedures are followed/implemented before work begins.

To control the risks that arises from such work. √

To take ownership of completed work and make work areas safe.√ (2)

5.2.2 The following processes need to be implemented during the course of the work.
The following equipment is to be withdrawn from service during the course of the work.

ALL users have been made aware of this suspension/withdrawal Yes/No.
Safety warning notices have been posted where required Yes/No.

The following steps have been taken to eliminate, control or contain hazards in the area.

The following safety measures are recommended. √√ √ √
(Any 2 x 1) (2)

5.3 TEFLON characteristics:

- Good machinability.✓
- Resistance to chemical attack✓
- Electrical insulation.
- Good strength to weight ratio.
- Rigidity.
- Non-metallic.
- Toughness.
- Good temperature range.
- Dimensional stability.
- Wear resistance.
- Impact resistance. (Any 3 x 1) (3)

Nylon characteristics:

- Electrically insulating.
- Tough and strong.
- Good sliding properties even in dry running conditions.
- Very good machinability.
- Abrasion resistant.
- Good vibration damping.
- Resistant to many oils, grease and diesel or petrol. (Any 3 x 1) (3)

[20]

TOTAL: 100