



**higher education  
& training**

Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

# **MARKING GUIDELINE**

**NATIONAL CERTIFICATE (VOCATIONAL)**

**NOVEMBER EXAMINATION 2011**

**MANUAL MANUFACTURING  
NQF LEVEL 2**

**11 NOVEMBER 2011**

**This marking guideline consists of 8 pages.**

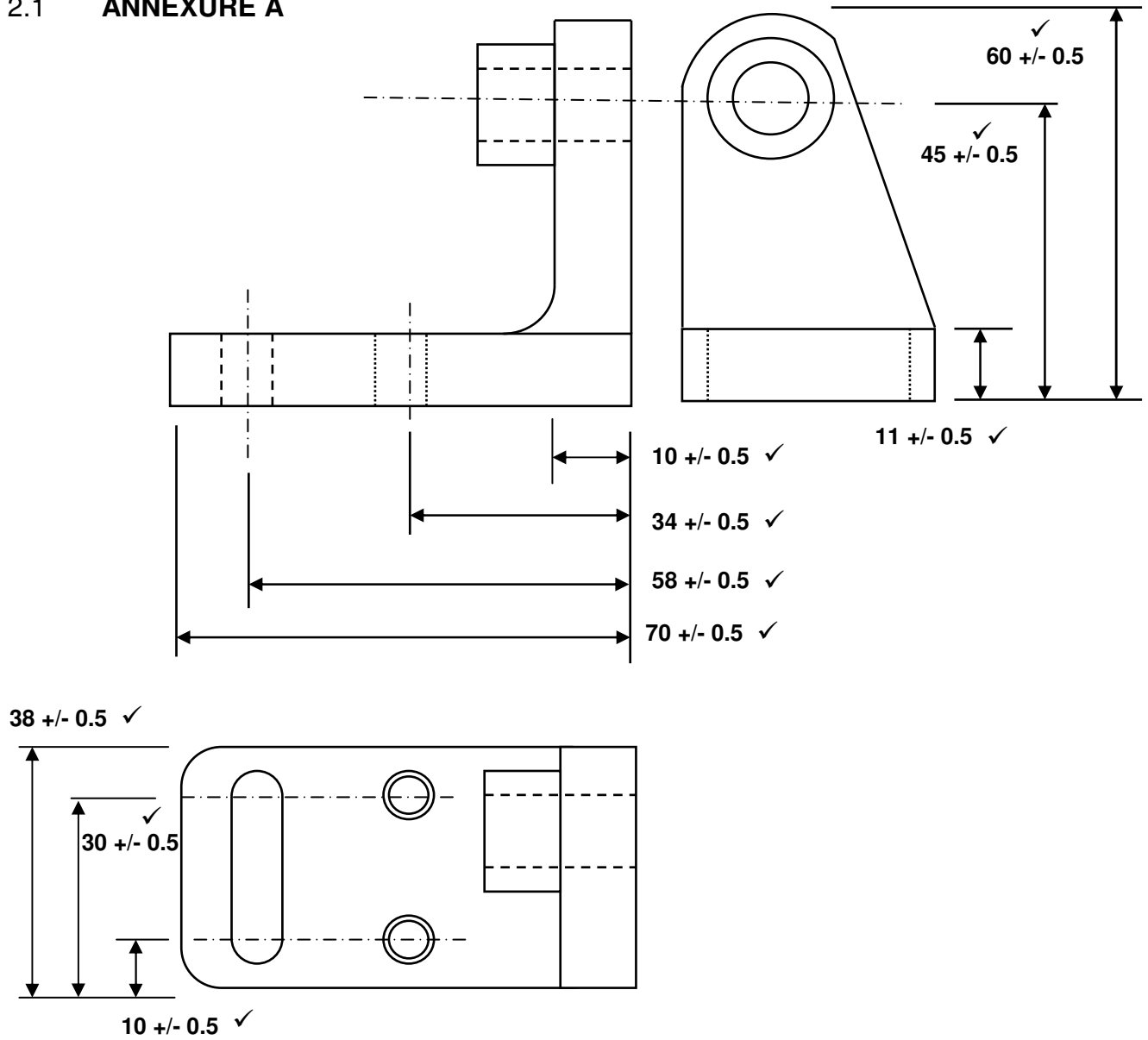
**QUESTION 1**

- |     |       |   |     |
|-----|-------|---|-----|
| 1.1 | 1.1.1 | True ✓  | (1) |
|     | 1.1.2 | True ✓  | (1) |
|     | 1.1.3 | False ✓   | (1) |
|     | 1.1.4 | False ✓   | (1) |
|     | 1.1.5 | True ✓  | (1) |
|     | 1.1.6 | False ✓   | (1) |
|     | 1.1.7 | True ✓  | (1) |
| 1.2 | 1.2.1 | Pinching or crushing ✓ Exposed moving parts, no safety guard.   | (1) |
|     | 1.2.2 | Fit a machine guard ✓   | (1) |
|     | 1.2.3 | Dust masks are used in dusty work environment ✓ or hygienic working environments  | (1) |
|     | 1.2.4 | So as to prevent injury due to falling heavy objects ✓ to prevent foot injuries and for non-slip.   | (1) |
|     | 1.2.5 | Steel toe cap<br>non-slip soles<br>chemical resistant soles<br>ankle protection<br>steel inner sole   | (2) |
|     |       | (Any two) ✓✓  | (2) |
|     | 1.2.6 | Personal hygiene<br>engineering design or safety machine guards<br>personal protective equipment<br>housekeeping<br>colour coding<br>education<br>safety procedures | (2) |
|     |       | (Any two) ✓✓  | (2) |

**[15]**

**QUESTION 2**

**2.1 ANNEXURE A**



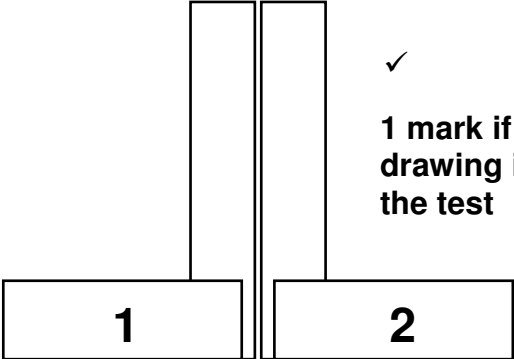
[10]

**QUESTION 3**

- |     |       |   |     |
|-----|-------|---|-----|
| 3.1 | 3.1.1 | Hacksaw. ✓                                  | (1) |
|     | 3.1.2 | 3.1.2.1 Frame ✓                             | (1) |
|     |       | 3.1.2.2 Adjusting screw ✓                   | (1) |
|     |       | 3.1.2.3 Handle ✓ or grip                    | (1) |
|     |       | 3.1.2.4 Hacksaw blade ✓                     | (1) |
|     |       | 3.1.2.5 Tension adjusting nut ✓ or wing nut | (1) |

- 3.2      3.2.1      B ✓ (1)
- 3.2.2      A ✓ (1)
- 3.2.3      C ✓ or B (1)
  
- 3.3      **Flexibility** ✓ – suitable for cutting mild steel and soft metals, flexible blade are more durable (Any one) ✓ (2)
  
- All hard** ✓ - very hard high speed steel (HSS) and brittle, work piece to be well secured (Any one) ✓ (2)
  
- Bimetal** ✓ - HSS cutting edges are welded into carbon steel backing making them the most useful blade, good for almost all applications (Any one) ✓ (2)
  
- 3.4      The marking off procedure is the process of marking guidelines onto a surface ✓ of the work piece material before it is formed /cut ✓ (2)
  
- 3.5      3.5.1      Scriber ✓ (1)
- 3.5.2      Centre punch or prick punch ✓ (1)
- 3.5.3      Engineers square ✓ ✓ (1)
- 3.5.4      Steel rule ✓ (1)

3.6



✓


**1 mark if the drawing illustrates the test**

By taking two engineers squares assuming one to be true-square say (1) bring them up against each other as shown. If there is not light when they but up against each other then both are square. However if there is a hint of light then square (2) is said to be out of square


(4)  
[25]

**QUESTION 4**

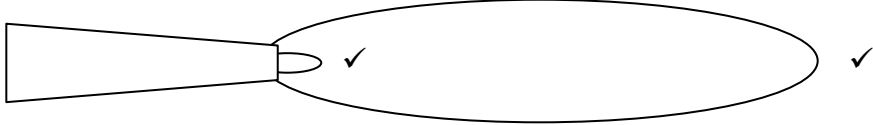
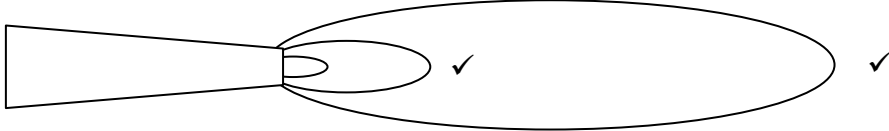

4.1 Leather apron ✓  
 Leather gauntlets ✓  
 Spats ✓ safety boots, welding helmet, welding gloves and overalls (3)

4.2 4.2.1  ✓ ✓ (2)

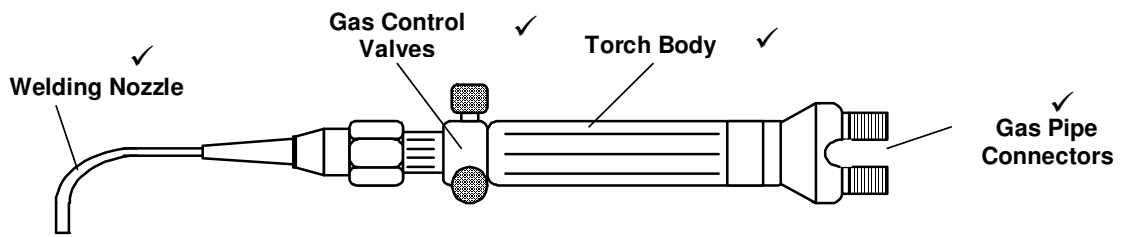
4.2.2  ✓ ✓ (2)

4.2.3  ✓ ✓ (2)

4.3 Prevention against electric shock – check electrical leads for damage  
 Prevention against radiation - using welding helmets and full body cover  
 The scattering of hot particles or globules of metal parts – leather protective wear  
 Flying pieces of slag chipped away from weld – protective welding screens  
 Heat and fumes – adequate ventilation  
 Arc rays which can seriously damage eyes – welding helmets, welding screens. Ensure gas bottle regulators are set correctly.  
 (Any five ) ✓✓✓✓✓ (5)

4.4  ✓ ✓  
 ✓ ✓  
 ✓ ✓ (6)

4.5



✓ ✓  
2 marks for drawing (6)

4.6

Gas welding is when the gas flame is gentle by nature and allows enough heat to the metal to form a molten puddle that moves between the metals being joined with or without a filler

Gas cutting requires the metal to be heated that it becomes molten and then it forced by increasing the pressure so as to remove the metal ✓✓ hence the name blow torch

(4)  
[30]

## QUESTION 5

## 5.1 ANNEXURE B

ACCIDENT REPORT									
NAME OF INJURED: <i>Mr Smith</i> ✓						DATE REPORTED: <i>27/05/2010</i>			
LOCATION : <i>Paint Shop</i>				DATE & TIME OF INCIDENT: <i>25/05/2010</i>					
DESCRIPTION OF DAMAGE: <i>Knee Injury</i> ✓ Dislocation of knee.									
DAMAGE/INJURY/LOSS ✓									
BUILDING	EQUIPMENT	FLOOR	MACHINERY	VEHICLE	INJURY	X	✓	PRODUCT	
GENERAL CAUSES									
STRUCK	FALL X	HANDLING	TRANSPORT	FIRE	MACHINE	ELECTRICITY	FALLING OBJECTS	STRUCK AGAINST	
Was this in the course of normal duties							YES X	NO	
UNSAFE ACTS			UNSAFE CONDITIONS			PERSONAL FACTORS			
OPERATING WITHOUT AUTHORITY			INADEQUATELY GUARDED			LACK OF KNOWLEDGE/ SKILL			
OPERATING AT UNSAFE SPEEDS			UNGUARDED			PHYSICALLY/MENTAL			
DISABLING SAFETY DEVICES			DEFECTIVE TOOLS AND EQUIPMENT			INCOMPATIBILITY			
USING EQUIPMENT UNSAFELY ✓			X	HAZARDOUS ARRANGEMENT			X	IMPROPER ATTITUDE	
USING UNSAFE EQUIPMENT			UNSAFE DESIGN OR CONSTRUCTION			✓	MOTIVATION		
UNSAFE LOADING/PLACING			POOR LIGHTING			X	JOB FACTORS		
TAKING UNSAFE POSITION			UNSAFE CLOTHING			✓	INADEQUATE WORK STANDARDS		
WORKING ON UNSAFE OR MOVING EQUIPMENT			POOR FLOOR CONDITION			X	HIGH RISK CONDITIONS		
TRANSFER TO ANOTHER JOB			POOR VENTILATION						
CONTROL STEPS TO PREVENT REOCCURANCE									
PERSONAL FACTORS			JOB FACTORS						
ATTEND TRAINING			WRITE WORK STANDARDS			MODIFY			
GIVE PERSONAL INSTRUCTION			REVISE WORK STANDARDS			✓	LOCKOUT		
HAVE MEDICAL TIME TABLE			JOB SAFETY STANDARDS			X	HOUSEKEEPING		
ATTEND SHE COMMITTEE			X	REVIEW PROCESS			REMOVE		
COUNSEL/WARN/ENFORCE			GUARD			PROVIDE PROTECTION			
			REPAIR			IMPROVE			
EMPLOYER FOLLOW-UP ACTION									
ACTION TAKEN			BY WHOM			WHEN			
1. IMPROVE GENERAL LIGHTING IN WALKWAY			Mr T Ungerer			Immediately			
2. ENSURE THAT WARNING SIGNS ARE POSTED WHEN FLOORS ARE WASHED			Mr D Pinches			Immediately			
NAME: <i>T Lotz</i>						DATE: <i>27/05/2010</i>			
SIGNATURE									

✓ = 1 mark × 10 = (10)

5.2	<p><b>Aisles</b> – be wide enough, demarcated and kept clean</p> <p><b>Storage</b> – sufficient packing space</p> <p><b>Work space</b> – enough work space for workers</p> <p><b>Ventilation</b>- fresh air</p> <p><b>Lighting</b> – sufficient lighting</p> <p><b>Amenities</b> – clean hygienic rest brooms</p> <p><b>Waste disposal</b> – waste products must be removed regularly</p> <p><b>Floors</b>- must be kept clean at all times</p> <p><b>Signage</b> – make use of colour coding</p> <p><b>Emergency equipment</b>-perform the relevant inspections</p> <p><b>Maintenance</b> – maintenance on workplace buildings</p>	(Any five) ✓✓✓✓✓	(5)
5.3	5.3.1	Welding screens must be used ✓	(1)
	5.3.2	First aid box or station ✓	(1)
	5.3.3	Ear Protection must be worn ✓	(1)
	5.3.4	Fire Extinguisher ✓	(1)
	5.3.5	Wear eye protection ✓	(1)
			<b>[20]</b>
		<b>TOTAL</b>	<b>100</b>