



**higher education
& training**

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

APRIL EXAMINATION

PLATERS' THEORY N2

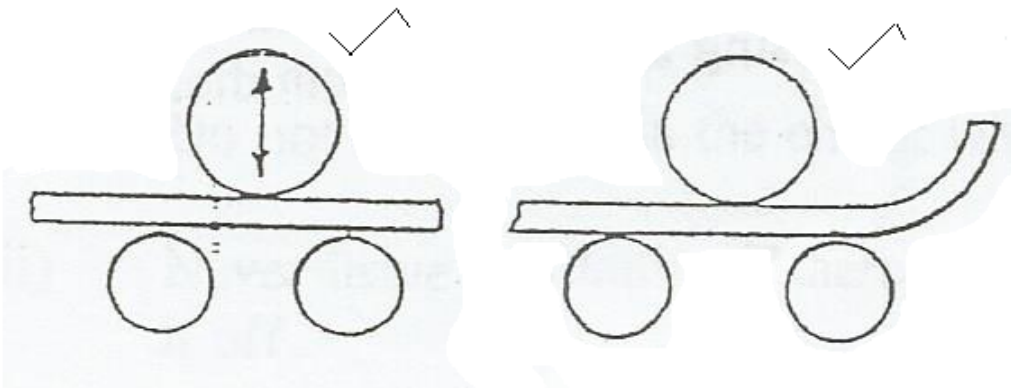
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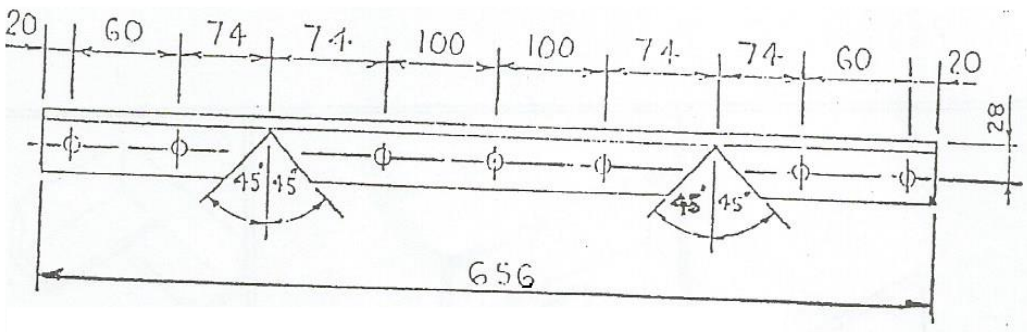
This marking guideline consists of 7 pages.

QUESTION 1: MACHINES

- 1.1 A Notching blades
 B Flat-steel shears
 C Round-bar and square-bar shears
 D Angle iron shears (cropper)
 E Punch section (5 × 1) (5)
- 1.2 • Never overload the machine.
 • Keep your hands away from the moving blade.
 • Use safety goggles and gloves.
 • Fasten down the job by means of a vice.
 • Switch off the machine before adjustment is made. (Any 2 × 1) (2)
- 1.3 The main function of this machine is to sharpen tools and drills√. It is also used for removing rough edges√ and for removing excess material√. (3)
[10]

QUESTION 2: ROLLING AND BENDING

- 2.1
- 
- These machines have three rolls arranged in a pyramid formation as shown above√. The bottom rolls usually driven, work on fixed centres√, while the top roll of larger diameter is adjustable up and down to suit the metal thickness and the radius of curvature to be rolled√. A plate with pre-bends to approximately the radius required is fed forward onto the rear roll and the top lowered before bending can take place√. (5)

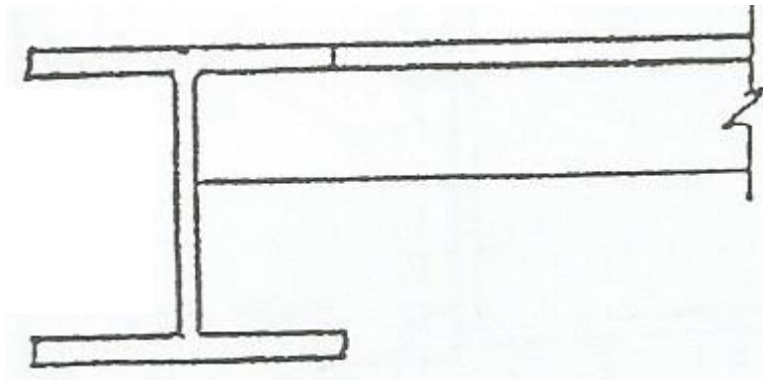
- 2.2
- 
- (5)
[10]

QUESTION 3: JOINING OF ROLLED STEEL SECTION

- 3.1
- Assembled items are identical.
 - Assembly time is reduced.
 - Workers can do the work alone.
 - It saves unnecessary measuring.
 - It enables untrained workers to do the work.
 - Jig can be stored for long periods of time and used again.
 - It reduces distortion.
 - It reduces the cost of production.

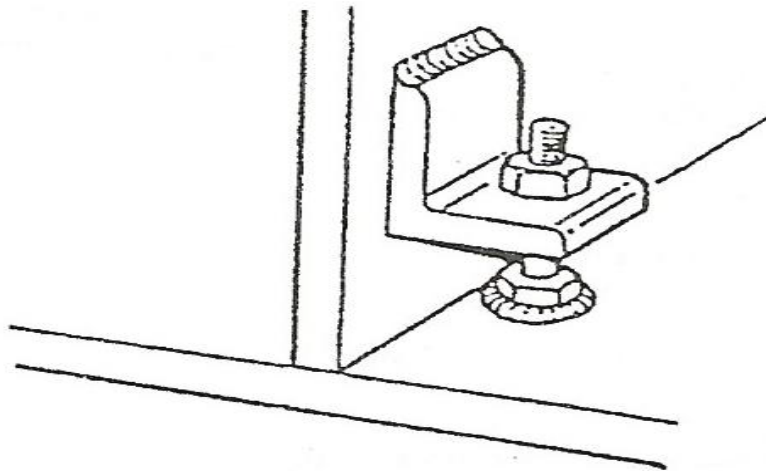
(Any 3 × 1) (3)

3.2



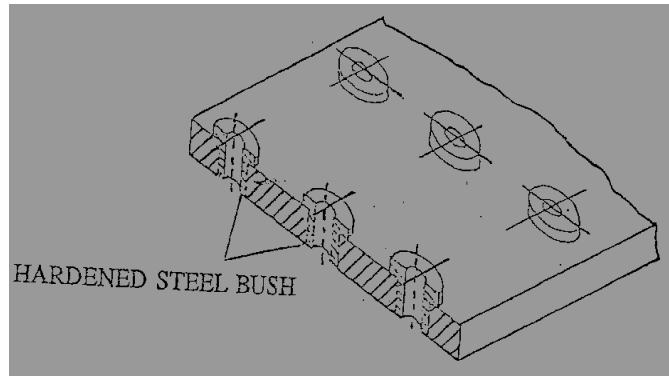
(3)

3.3

(4)
[10]

QUESTION 6: TEMPLATES

6.1



(2)

6.2

- To avoid repetitive measuring and marking-off of the same dimensions, where a number of identical parts or articles are required.
- To avoid unnecessary wastage of material. (2 × 1)

(2)

6.3

- Marking-off large numbers of exactly the same type from a template or pattern is a much quicker method and a great deal more accurate than measuring and marking each part individually.
- It is almost impossible to anticipate exactly where to begin in order that the complete layout can fit and material wastage can be prevented. (2 × 1)

(2)

[6]

QUESTION 7: METALS

7.1

A non-ferrous metal is a metal that does not contain iron.

(1)

7.2

Tempering.

(1)

7.3

- 7.3.1 False
- 7.3.2 True
- 7.3.3 True

(3 × 2)

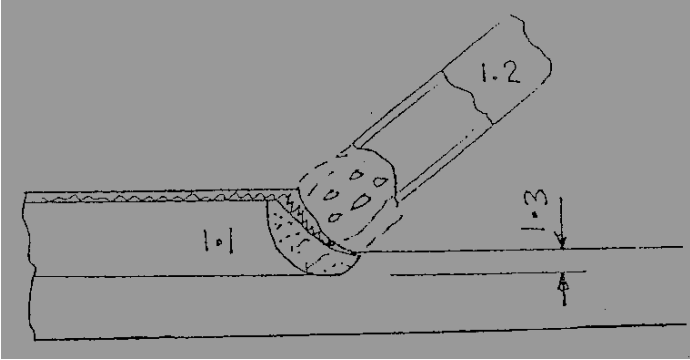
(6)

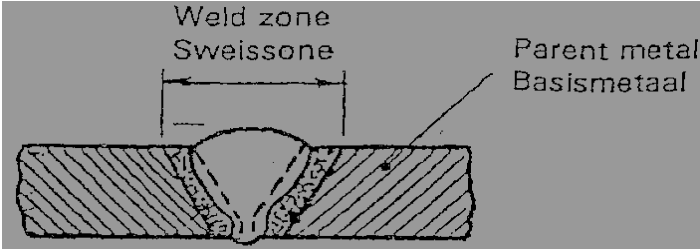
[8]

QUESTION 8: GAS WELDING AND CUTTING

- 8.1
- Gas pressure
 - Flame setting
 - Nozzle type
 - Nozzle cleanliness
- (4 × 1) (4)
- 8.2 Flame cleaning nozzles spread the heating flame√ so that mill scale, oxide, paint√ and grease can be removed.√ (3)
- 8.3
- Mild steel
 - Alloy steel
 - Stainless steel
 - Non-ferrous metals
- (Any 3 × 1) (3)
[10]

QUESTION 9: ARC WELDING

- 9.1
- 
- 9.1.1 Deposited metal laid down by fusion of an electrode
- 9.1.2 Electrode – a rod or wire (usually covered) for providing weld metal by fusion by the electric arc
- 9.1.3 Penetration – the distance the weld metal fuses into the root of the joint
- (3 × 3) (9)

- 9.2
- 
- Weld zone
Sweissone
- Parent metal
Basismetiaal

9.2	9.2.1	Weld zone – the section where welding is taking place		
	9.2.2	Parent metal – the section or part to be welded		
	9.2.3	Reinforcement – a weld-run or series of runs on a surface	(3 × 2)	(6)
				[15]

QUESTION 10: CALCULATION AND PLANNING

10.1	Area of the base	= $0,38 \times 0,8\sqrt{}$ = $0,304 \text{ m}^2\sqrt{}$		
	Area of the side	= $0,1 \times 0,8 \times 2 + 0,1 \times 0,38 \times 2\sqrt{}$ = $0,236 \text{ m}^2\sqrt{}$		
	Mass of 1 tray	= $(0,304 + 0,236) \times 7,85 \times 5\sqrt{}$ = $21,195 \text{ kg}\sqrt{}$		
	Total mass of 120 trays	= $120 \times 21,195\sqrt{}$ = $2\,543,4 \text{ kg}\sqrt{}$		(10)
10.2	10.2.1	Mass = $18,8 \times 4\sqrt{}$ = $75,2 \text{ kg}\sqrt{}$		(2)
	10.2.2	Mass = $78,5 \times 0,045\sqrt{}$ = $35,325 \text{ kg}\sqrt{}$		(3)
				[15]
			TOTAL:	100