

higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

**NATIONAL CERTIFICATE
AUGUST EXAMINATION
PLUMBING THEORY N1**

21 JULY 2014

This marking guideline consists of 5 pages.

QUESTION 1

- 1.1 Cleanliness
- 1.2 Neat
- 1.3 Orderly
- 1.4 Trip hazards
- 1.5 Work place
- 1.6 Aisle marking
- 1.7 Maintenance
- 1.8 Accident
- 1.9 Fire prevention
- 1.10 Ongoing

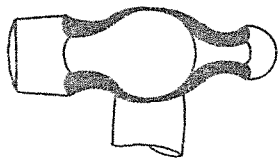
(10 × 1) [10]

QUESTION 2

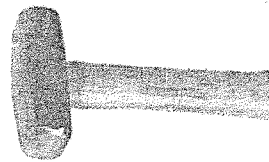
- 2.1
 - Ensure that the shaft is of the correct size for the head and secured by wedges
 - If the shaft dries out the head will become loose – soak the hammer in water from time to time
 - Replace damaged shafts

(3 × 2) (6)

2.2



BALL-PEEN HAMMER:



A club hammer

(4- marks for sketch) (4)
[10]

QUESTION 3

- 3.1
 - 3.1.1 Ferrous metals – Metals containing iron (e.g. Stainless steel)
 - 3.1.2 Nonferrous metals – are nonmagnetic and corrosion resistant (e.g. lead)
 - 3.1.3 Galvanising is the process of coating steel with zinc
 - 3.1.4 Atmospheric corrosion- the gradual destruction or alteration of a metal or alloy by contact with substance of a metal present in the atmosphere such as oxygen, carbon dioxide, water vapour, sulphur and chlorine atoms

(4 × 2) (8)

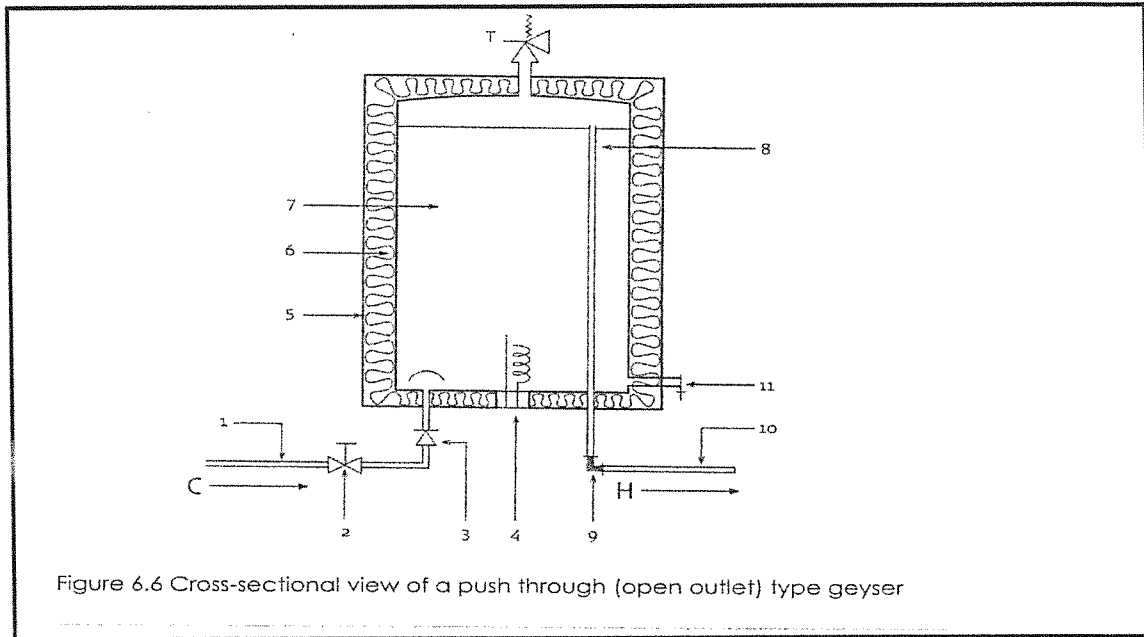
3.2	3.2.1	Au		
	3.2.2	Cu	(2 × 1)	(2)
				[10]

QUESTION 4

- 4.1
- It must be strong
 - It must form bond with the metal to be soldered
 - It must flux easily
 - Melting point of solder must be lower than that of metals to be
 - Soldered
 - Must turn into liquid which will flow easily
 - Solder must not fuse with impurities
 - Must contain the proportional amount of tin and lead for the job is required for
- (Any 5 × 1) (5)
- 4.2
- Cylinder
 - Hoses
 - Regulators
 - Blow pipe
 - Nozzles
 - Flash back-arrestor
 - Trolley
- (Any 5 × 1) (5)
- [10]**

QUESTION 5

- 5.1
- Precipitation – Occurs when water vapour in the atmosphere condenses into clouds and falls to the earth in various forms (ie. rain, snow, ice, pellets and hail)
 - Percolation and run off – water that flows down streams and rivers and is not constant
 - Evaporation and transpiration – process whereby which water enters in the ocean and on land changes to vapour and enters atmosphere as gas, evaporation from plants is called transpiration
- (3 × 3) (9)
- 5.2 H₂O (1)
- [10]**

QUESTION 6

(4)

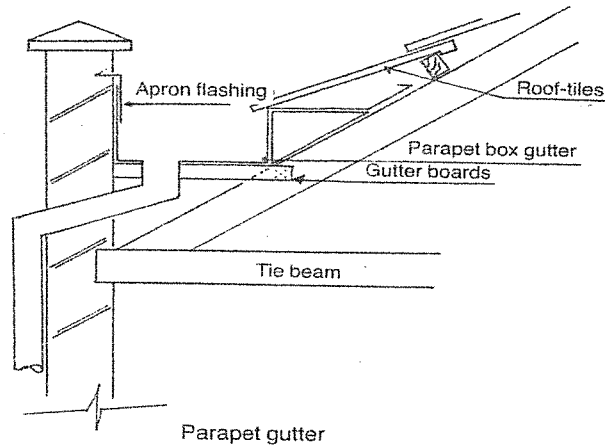
- 1 Cold water supply pipe
- 2 Stop cock
- 3 Non- return valve
- 4 Element with thermostat
- 5 Metal casing
- 6 Insulation
- 7 Water in heating cylinder
- 8 Hot water outlet
- 9 Swivel bend
- 10 Hot water draw-off point
- 11 Drain cock

(11)
[15]**QUESTION 7**

- 7.1 Access Branch Connection
- 7.2 Cleaning Eye
- 7.3 Inspection Eye
- 7.4 Shower
- 7.5 Wash Hand Basin
- 7.6 Wash Trough
- 7.7 Ventilation pipe
- 7.8 Urinal
- 7.9 Un-plasticised polyvinyl chloride
- 7.10 Soil pipe

(10 × 1) [10]

QUESTION 8



(5 marks for sketch) [15]

QUESTION 9

9.1 $302 = X^2 + 122$

$900 = X^2 + 144$

$900 - 144 = X^2$

$\sqrt{756} = \sqrt{X^2}$

$27,495 = X$

(5)

9.2 The intensity of pressure = head of water x 9,8

= $445 \text{ N/m}^2 \times 9,8$

= $9\,321 \text{ N/m}^2$

= $9,321 \text{ Kn/m}^2$

(5)

[10]

TOTAL: 100