



JUNE XXXX

INTERMEDIATE LEVEL

Subject Title	Plumbing Maintenance
Subject Code No.	5465
Paper No.	TWO

Duration: 3 hours

INSTRUCTIONS TO CANDIDATES

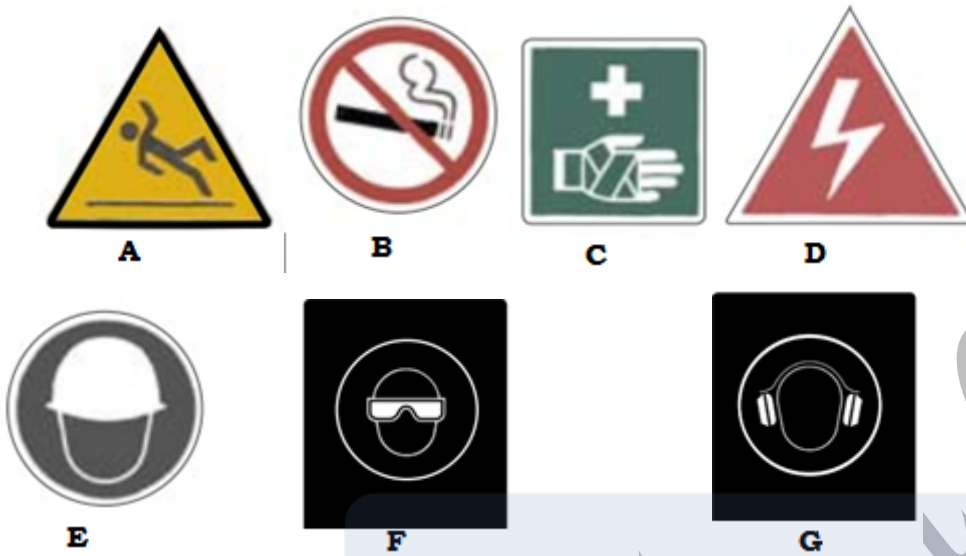
1. You are reminded of the necessity for good English and orderly presentation in your answers.
2. This paper is made up of SIX sections; you are required to answer FOUR sections of your choice.
3. All questions in each section are compulsory.
4. All sections carry equal marks (25 marks).
5. The paper is scored on 100.

You are reminded of the necessity for good English and orderly presentation in your answers.

1) Hygiene and safety at work

(a) Identify and give the function of the following safety board's

(1.5 x 7 x 2 = 21 marks)



(b) Give four (04) methods of the prevention of the risk of electrocution when working in the welding workshop

(4 marks)

2) Pipe mechanics

(a) Give one merit of the following piping materials used in domestic and industrial plumbing applications:

(1.5 x 4 = 6 marks)

- Copper pipes
- Galvanize iron pipes
- Plastic pipes
- Cast iron pipes

(b) Give four (04) methods used in jointing copper tubing

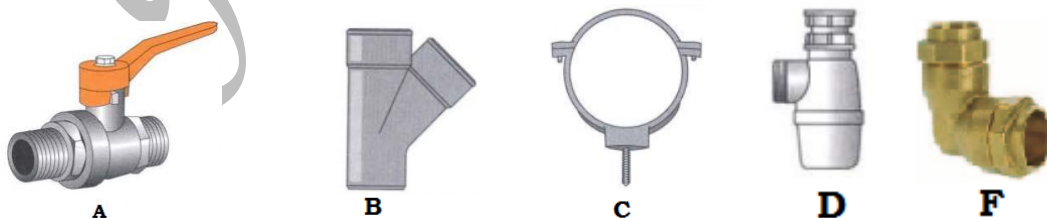
(1 x 4 = 4 marks)

(c) Give two consequences of the expansion of pipelines

(2.5 x 2 = 5 marks)

(d) Identify and give the functions of the following fittings and devices:

(2 x 5 = 10 marks)

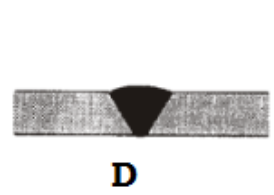
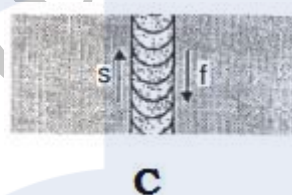
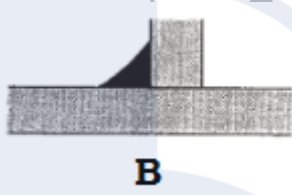


3) Electric arc welding

- (a) Name Four types of welding assembly of metallic pieces with illustrations (4 marks)
- (b) Give four mechanical properties of metals. (4 marks)
- (c) Name the test used to determine the metal's ability to withstand a stretching load. (2 marks)
- (d) Distinguish between tapping and scratching method of striking an arc (2 marks)
- (e) Distinguish between normal and reverse polarity (3 marks)
- (f) Give two (02) types of current used in electric arc welding. (2 marks)
- (g) Name four (04) materials used in the set-up and the welding process proper (2 marks)
- (h) Give the importance of arc length (2 marks)
- (i) Explain why electrodes are made in different sizes. (2 marks)
- (j) Explain how the electrode classification is given on the packet. (2 marks)

4) Oxy-gas welding and cutting

- (a) Give two precautions to be observed before the mounting of the gas regulators on cylinders. (3 marks)
- (b) Identify the following welding positions (1 x 4 = 4 marks)



- (c) Identify the type of Oxy-acetylene flames below, give their characteristics and their consequences on the welded metals

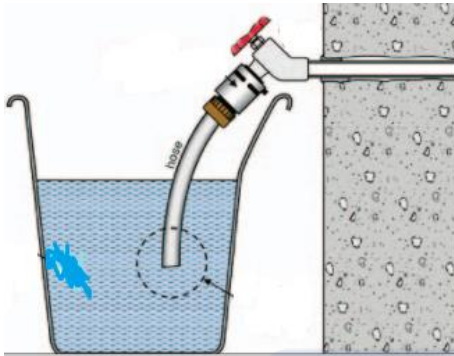


- (d) Describe and give the function of two main gases use in OA welding (2 x 2= 8 marks)
- (e) Describe the procedure to light a blow pipe (4 marks)
- (f) Give the procedure of regulating a pressure regulator (4 marks)
- (g) Identify the colours of the oxy-acetylene welding bottles (2 marks)

5) Maintenance

(a) You are called for an intervention in a house where peoples face water network contamination and they don't know the cause.

- By observing the figure below, diagnose the cause of water network contamination. **(5 marks)**
- Propose two (02) solutions to avoid water network contamination. **(4 x 2 = 8 marks)**



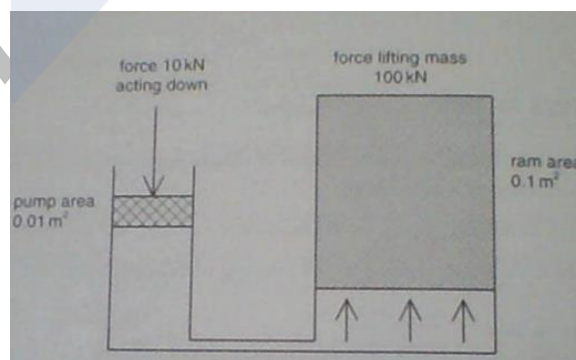
(b) In the same house, water leaks under the WC tank.

- Diagnose two (02) causes of that trouble. **(4 x 2 = 8 marks)**
- Cure the trouble. **(5 marks)**

6) Trade calculation

a) The figure below shows a hydraulic press is a machine which consists of two different-size pistons enabling it to lift weights by the application of a small force. The weight that can be lifted depends on the ratio of the areas of the two pistons.

- Determine the pressure to the water inside the cylinder by the pump. **(7 marks)**
- Determine the pressure transmitted to the ram. **(8 marks)**



b) Using the British method, calculate the capacity of a septic tank which is designed to serves nine (09) peoples.

(10 marks)