

PRE-TECHNICAL SKILLS

1. GENERAL COMMENTS

The standard of the paper compared favourably with that of the previous year. The general performance of the candidates was quite good when compared to the previous years.

2. A SUMMARY OF CANDIDATES' STRENGTHS

- (1) Most candidates explained technical terms without any difficulty.
- (2) Candidates responses to the design and make question were correct and appropriate.
- (3) Majority of the candidates were able to draw to full size the given orthographic projections views.
- (4) Correct usage of equipments (drawing) were practised by most of the candidates.
- (5) Majority of the candidates attempted the three questions demanded by the rubrics.
- (6) Candidates presented neat and concise sketches and good handwriting.

3. A SUMMARY OF CANDIDATES' WEAKNESSES

- (1) Candidates were not brief in delivery their responses.
- (2) Candidates had poor draughtmanship skills.
- (3) Most of the candidates could not explain a design brief satisfactorily.
- (4) Most candidates wasted time by answering all the questions.

4. SUGGESTED REMEDIES

- (1) Schools should be provided with the appropriate documentation including the prescribed syllabus for the BDT (Pre-Technical Skills).
- (2) Candidates must be exposed to appropriate theory and practical skills training to improve upon their performance.
- (3) Teachers should teach candidates the skill of labelling sketches and drawings correctly.
- (4) Teachers should revise well all the topics in the syllabus before the examination.
- (5) Candidates are advised to restrict themselves to instructions demanded or required by the rubrics.
- (6) Teachers should encourage candidates to study in groups so that they can exchange ideas.

5. DETAILED COMMENTS

QUESTION 1

- (a) **State two functions of protein in the body.**
- (b) **List two ways by which patching can be done.**
- (c)
 - (i) **Explain a design brief.**
 - (ii) **List three methods of carrying out design investigation.**
 - (iii) **State two factors to consider when selecting the best solution from the generated possible solutions in designing.**
- (d)
 - (i) **What is the colour spectrum?**

- (ii) List the three primary colours of light.
- (iii) Explain secondary colours.

In Question 1(a), candidates were to state two functions of protein in the body, few candidates could not response to this part of the question.

This question was well attempted by most of the candidates except that some candidates could not differentiate between primary and secondary colours.

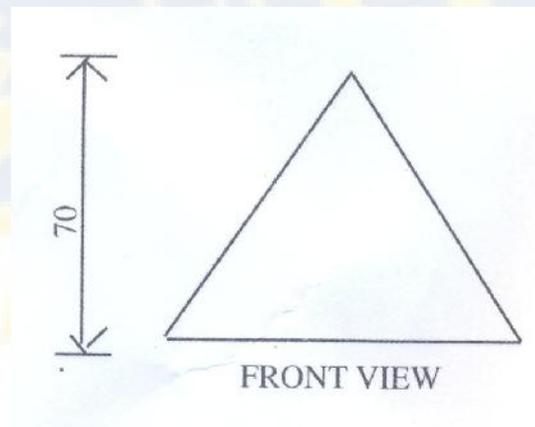
Definition of the colour spectrum was poorly done.

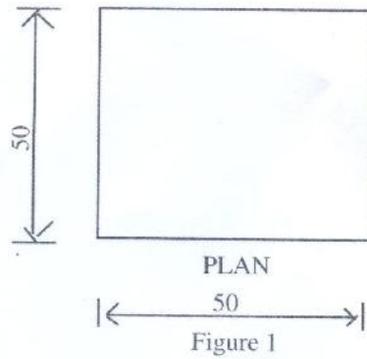
Most of the candidates could not define a design brief, some rather explained a situation. Majority of the candidates could list methods of carrying out design investigations even though this part of the question was not quite encouraging.

Candidates stated factors to consider when selecting the best solution from the generated possible solutions in designing. Candidates' performance was generally good.

QUESTION 2

Figure 1 shows two views of a solid to be produced with sheetmetal.





- (a) **Draw full size the following:**
- (i) **front view;**
 - (ii) **plan;**
 - (iii) **surface development.**
- (b) **State the name of the solid in Figure 1.**
- (c) (i) **Make a freehand pictorial sketch of a marking gauge.**
(ii) **Label any two parts of the tool you have sketched in (c)(i) above.**

Most candidates performed creditably well by producing the front view, plan and surface development using the projected true length, and stated the name of the solid as square based pyramid.

The marking gauge was well sketched by most of the candidates, however, in labelling the sketch, few of them were rather writing the names of the various parts under the sketch instead of labelling it on the sketches. Candidates' performance was fair.

QUESTION 3

- (a) **Using symbols, draw an electrical circuit diagram to show the following:**
- (i) **two bulbs in parallel;**
 - (ii) **a switch;**
 - (iii) **a cell.**
- (b) **State one function of a light emitting diode (LED) in an electrical circuit.**
- (c) (i) **Make a freehand sketch of a dot punch.**
(ii) **Indicate the point angle on the tool you sketched in (c)(i) above.**
(iii) **State one use of the tool sketched in (c)(i) above.**
- (d) **Copy and complete the table below.**

| ITEM | ONE SUITABLE MATERIAL FOR MAKING IT |
|------------------|-------------------------------------|
| Traditional oven | |
| Kitchen stool | |

| | |
|-------------------------------|--|
| Bristle of tooth brush | |
| Garden rake | |

- (e) **State one reason each for carrying out the following operations:**
- (i) **levelling a wall;**
 - (ii) **applying flux when soldering.**

Majority of the candidates ended up drawing the bulbs in series, instead of parallel connection, the switch was also placed at the wrong position in some few cases, however almost all the candidates who attempted this question drew the symbol for the cell correctly. Most candidates could not state the functions of the light emitting diode (LED) in an electric circuit.

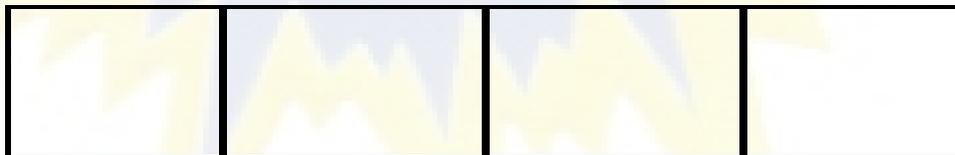
The dot punch was well sketched by the candidates, few had problems with how to indicate the point angle of 60° correctly. Candidates in attempting to state one suitable material for the various items in the given table ended up writing general materials, instead of specific materials.

Majority of the candidates were able to state the reason for levelling a wall, but could not state the reason for applying flux when soldering. The general performance of the candidates was good.

QUESTION 4

- (a) **Explain the following:**
- (i) **ratio 1:4 for mortar mixture;**
 - (ii) **non-ferrous alloys.**
- (b) (i) **Make a freehand pictorial sketch a flat screwdriver.**
(ii) **State one main use of the tool you sketched in (b)(i) above.**

Figure 2 shows one course blockwall. Use it to answer Question 4 (c)



- (c) (i) **Add three more courses to the wall in Figure 2.**
(ii) **Show a toothing end on the wall.**
(iii) **List two tools for laying the wall.**
(iv) **State one reason for introducing a half-bat in the wall**

Most candidates could not explain non-ferrous alloy because they could not use the word combination or mixture of two or more non-ferrous metals. Candidates were able to explain the ratio 1:4 in relation to mortar mix in various ways which were correct, thus they used different containers for the measurement. Example, 1 bag cement to 4 bags sand; 1 headpan cement to 4 headpans sand; 1 wheelbarrow cement to 4 wheelbarrows sand. Majority of the candidates were able to sketch the pictorial drawing of a screw driver correctly. This is an indication that students often saw artisans and teachers demonstrating the use of a screwdriver in everyday life.

Candidates were able to draw the four courses of the wall correctly, but few candidates drew continuous vertical joints which are not acceptable in bonding of walls. Few candidates could not differentiate between toothing end and raking back end.

Candidates listed the two tools used for laying a wall, but few candidates were able to state one reason for introducing the half-bat in the wall. Candidates' performance was generally good.