

METALWORK

<p>Paper 6040/01 Theory, Drawing and Design</p>

General comments

This year there was a single centre entry. All candidates made a reasonable attempt at both parts of the question paper. In **Section A** all questions were attempted. **Questions 1** and **2** were the most popular and **Question 3** was the least popular.

Comments on specific questions

Section A

Question 1

This question was the most popular with the majority of candidates attempting it.

- (a) Good knowledge of datum surfaces. Many took the measurement and marked two points and then joined with a rule, rather than using an engineers square and odd leg callipers.
- (iii) Good knowledge of dividers.
- (b) Candidates all attempted to hold, cut and finish the edges. The best answers followed the guidance in the question.

Question 2

Several named a non ferrous metal at (a), but some gave a ferrous metal.

- (b) Again, the best answers followed the question closely. Candidates need to note the bracketed marks. Each of the parts (i) – (iv) were worth the same number of marks and answers need to match that, in notes **and** sketches.

Question 3

This was the least popular question, with insufficient marks for the examiners to comment on.

Question 4

Some good answers here showing knowledge of internal and external threads. It is obvious that candidates are familiar with hand cutting of threads and are aware of good practice.

- (b) Good knowledge was shown of the reason for using lubricant.

Question 5

This was the second least popular question. Those who did attempt this question showed that they were familiar with the sequence of cutting operations to produce the shape shown. Also, in part (b), some knowledge of the 3 jaw chuck was shown.

Section B: Drawing and Design

Quite a variation in the standard of drawings in this section. All candidates attempted both **Questions 6 and 7**.

- 6** The best answers followed the instructions closely and gave working solutions for a device which would hold the scriber, with adjustment and locking. Some gave solutions which would be difficult to adjust and lock.
- 7** There were a few candidates who demonstrated a good standard of draughtsmanship.

METALWORK

Paper 6040/02

Practical

General comments

Most candidates were able to make all of the parts, although not all had the hole punch assembled completely. Few hole punches worked as intended mainly because either **Part 6** would not pass through the hole in the base or the arm, **Part 5**, would not pivot as intended.

Overall dimensions of the different parts were normally fairly accurate. The Examiner allows a tolerance of $\pm 1/2$ mm for maximum marks on dimensions up to 15 mm and ± 1 mm for maximum marks on dimensions over 15 mm. No marks are awarded if dimensions are above ± 1 mm and ± 2 mm respectively.

Comments on specific parts

Part 1

The base of the hole punch was marked out and worked fairly accurately by most candidates although the chamfers were rarely to the correct dimensions. This part should have been fairly straightforward as all the holes were on the centre line.

Part 2

The arm support required a slot to be formed at the top and this was achieved by the majority of candidates although the dimensions were not always to the drawing. Most candidates drilled and tapped the hole at the base of the support although few countersunk the underside of the base to receive the head of the M6 joining screw. The curves were formed at the top of the support in most cases.

Part 3

This part was generally drilled accurately although the riveting with the spacer, **Part 4**, in position, rarely resulted in both parts lining up. Many candidates did not file the rivets flush on the underside of the base.

Part 5

The arm was generally produced to reasonably accurate dimensions, although it did not always pivot fully in **Part 2**. This was generally due to the shouldered end being too long or the slot in **Part 2** not being deep enough. A very small number of candidates, indeed, followed the instruction to shape the handle so that it was comfortable to hold.

Part 6

The punch pin was usually completed with the small plate, **Part 7**, silver soldered in position. Only a small number of candidates shaped **Part 7** as instructed and the soldered joint was rarely filed completely flush on the top surface.

Assembly

As has already been stated, very few candidates completed the parts to the required accuracy for the punch pin to slide through its hole in the base and this was disappointing. However, there was no requirement for candidates to produce the hole punch to a particular 'hand' so there were no problems in this respect. Where candidates had prepared the end of the support, **Part 2**, accurately and drilled and tapped the threaded hole to the required depth, then these two parts were normally square and rigid.