

## **METALWORK**

### **SUBJECT 6045**

#### **PAPER 2**

#### **GENERAL COMMENTS**

There was improvement in the candidature as compared to that of last year 2009. The majority of candidates attempted to carry out all the processes as per examination requirement but showed poor performance in slot making, soldering and finishing.

#### **Part 1**

Most candidates attempted to carry out all processes required for Part 1 but faced some difficulties in producing the slot, even curves and also failed to work to given dimensions.

#### **A. 10mm and 3mm Recesses**

These were well attempted but most candidates failed to work to given measurements. Centres used different methods of removing waste material and those centres that used the chisel method left a lot of chisel marks on the surface of the piece. Most candidates managed to produce clean corners on both recesses but faced some difficulties in producing upright sides of **10mm** recess.

#### **B. $\phi$ 5mm Hole**

This was well attempted by most candidates. Location and drilling using a correct size drill was well attempted by most of the candidates.

#### **C. Slot**

The majority of candidates who attempted to work on the slot were not able to completely remove waste material, thereby loosing marks on parallelism of the slot and dimensions associated with the slot.

#### **PART 2**

#### **A. Shoulder**

Most candidates attempted the shoulder but failed to work to **3mm** depth. Some candidates were not even able to produce clean corners.

**B.  $\phi$ 4.2 Hole and Threading**

This was well attempted by most candidates but failed to locate the correct position of the hole. Marking out and drilling of the hole was supposed to be done before shaping or making of the shoulder. Most candidates attempted cutting threads with a few ending up with taps breaking in the blind hole.

**C.  $\phi$ 8.5 Hole**

The hole was well attempted by most candidates. Correct use of the right drill and size was observed in the candidates' work pieces.

**D. Bevel**

Bevels were successfully done by most candidates although they lost marks on dimensions.

**PART 3****A. Shoulders/Bevels and  $\phi$ 8.5mm Hole**

These were done successfully by most candidates. Some candidates left shoulder corners uncleaned.

**PART 4****A.  $\phi$ 5mm and  $\phi$ 6mm Holes**

Drilling of the two holes was successfully done. A few candidates drilled the holes on the wrong ends of the work piece.

**B. R5 and R7 curve/Tappers**

These were poorly done by most candidates. Uneven curves were observed on candidates' work. The majority of candidates lost marks because they did not attempt on tapers. Those who attempted did not produce straight tapers.

**PART 5 – SPIGOT THREADING**

Part 5 was well attempted by most of the candidates although some candidates produced threads of a different pitch from those of a nut. A few candidates produced drunken threads.

## **SILVER SOLDERING/BRAZING**

Only a handful of candidates managed to solder on the correct side of the work. Most of those who soldered did not cut the spigot and file flush.

## **FINISH**

Most of the candidates did not draw file, deburr and avoid tool marks. As a result, they lost some marks.

## **ASSEMBLY**

### **Part 1 to 2**

The pieces could fit together but the holes were mis-aligned and as a result the M5 screw could not fit into the holes.

### **Part 1 to 3**

The two parts could fit perfectly well and many candidates scored marks.

### **Part 4 to 5**

Many of those candidates who threaded part 5 managed to assemble part 4 to 5 using the M6 nut.

### **Part 6 to 4 soldered together**

Most of the candidates did not manage to solder the parts together and hence lost marks.

## **RECOMMENDATIONS**

- Centres should look for correct materials as prescribed in the advance information.
- Preparation of materials to be strictly supervised to make sure that the candidates meet the specifications in the advance information.
- Centres are advised to use strong transparent plastic bags for enclosing the candidates' work pieces.
- Supervisors to make sure that attendance registers for candidates are marked/ticked correctly and submitted together with the scripts.

**CONCLUSION**

Generally the level of performance of the 2010 candidates was the same as that of 2009 candidates. The majority of centres provided the suitable materials for the examination.