

# Arkwright Examiners' Report for the Aptitude Paper sat on Wednesday 2<sup>nd</sup> February 2011



Questions 1 and 3 proved to be the most popular this year. It seems that Question 2 was perceived to be the most challenging and many candidates who tackled it had failed to read, and understand the question.

## Section 1

Most candidates developed 3 ideas and described their thinking with supporting annotation.

In this section a creative response is required to achieve high marks: many responses tended to be rather predictable and unoriginal. Examiners were looking for creativity and flair rather than fully developed design solutions. Also, too many candidates spent valuable time developing their ideas at this stage, to their detriment.

## Section 2

Many candidates failed to comprehend fully the main requirements of the question chosen and therefore did not focus on the solving of a specific design problem.

The strongest scripts showed evidence of functioning design solutions where appropriate methods of construction and materials were clearly evident.

Q1 – Drill devices.

Better candidates provided three clearly different possible applications where the drill was integrated into a mechanical system. Weaker candidates simply designed an attachment that inserted into the chuck of the drill. Better solutions considered gearing and how the rotary energy could be transferred.

Q2 – Stored energy display.

Stronger responses to this question saw candidates designing a display to use in conjunction with the kinetic charger, as requested in the question. However, most produced simple designs for the casing of the charger that often included a small display which proved unsuitable for recording and encouraging further exercise.

Q3 – Golf ball collector.

Candidates tended to design the whole machine in this question rather than just the method by which the balls could be picked up and transferred to the hopper, as asked for in the question.

Despite this choices of materials and methods of construction were well addressed: good understanding was evident for these aspects of the question.

Q4 – Cable measurer.

Although less popular as a question, many candidates showed viable solutions with a good knowledge of materials and constructions. However, the precise method by which the cable was measured was often left unresolved.

The most able candidates produced an elegant solution that addressed all aspects of the question.

**Candidates can be disadvantaged by schools failing to provide A3 paper. Schools are advised to use the exemplar sheet which will be provided on line for the 2012 Aptitude Paper.**