RESISTANT MATERIALS SITUATIONS 2016

1. Some domestic pets can sometimes suffer from boredom and laziness. On the market, there are several pet toys which stimulate the pet’s brain and senses.

You are requested to design and make a prototype toy for a particular type of pet. This toy should dispense small treats or kibbles while the animal is interacting with it so as to encourage further play and slow eating. The toy can also include a problem-solving challenge or have variable levels of difficulty to gain access to treats. Attention should be given also to hygiene and maintenance for the suggested product.

2. The owner of a restaurant decided to undertake refurbishing in the premises. As part of the refurbishment, the owner wants a prominent wall-hanging clock with moving figures to compliment the interior of the restaurant.

You are asked to produce the structure and face of the clock together with the mechanical parts controlling the figures. These figures are to be controlled by a rotary input. You do not need to design and include the clockwork mechanism; however an alternate rotary input may be used to demonstrate the movement.

3. A company producing lighting for special events wants to diversify its market and create a product aimed for teenage parties.

The product has to mechanically project multiple moving shapes in alternating colours. It shall be placed onto the DJ stand. You are only to design the structure and mechanism of the artefact. There is no need to include the actual electrical parts; however you need to take into consideration electrical insulation and demonstrate a working prototype.