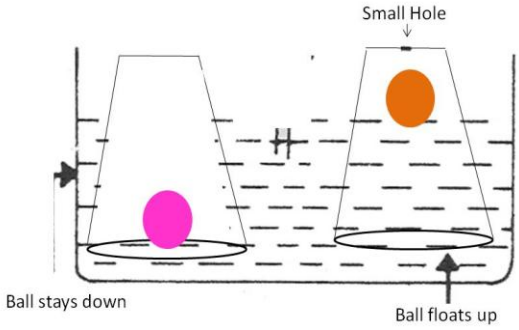
QUEST – Experimental Science Quiz held on 61st **BITM Anniversary Day**
Answer Sheet

Experiment 1:

This experiment explains that any like any other form of matter, air also occupies space. The trick here is one of the cylinder is having a hole on top, which allows the trapped air to go out. As a result water can get into the cylinder allowing the ball to float up. In other case, the trapped air cannot got go out, hence water cannot get in resulting the ball to stay down.

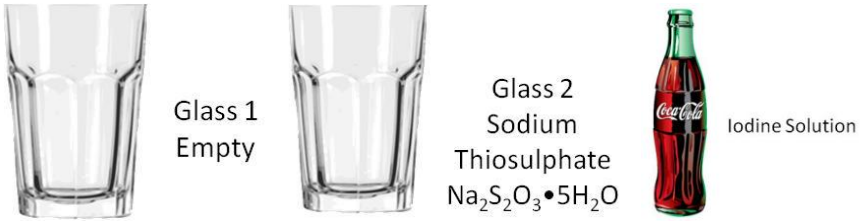


Experiment 2:

As the magnet moves around the Alluminium disc, a changing magnetic field is created around the Alluminium disc. As a result of this changing magnetic field, Electric Current (which is known as Eddy Current) is induced in loops on the surface of the disc. Secondary magnetic field is developed due to this current and by the repulsion of these two magnetic fields, the disc. starts to rotate.

When the magnet stops, the secondary magnetic field disappears and the disc comes to rest.

Experiment 3:



Reaction:

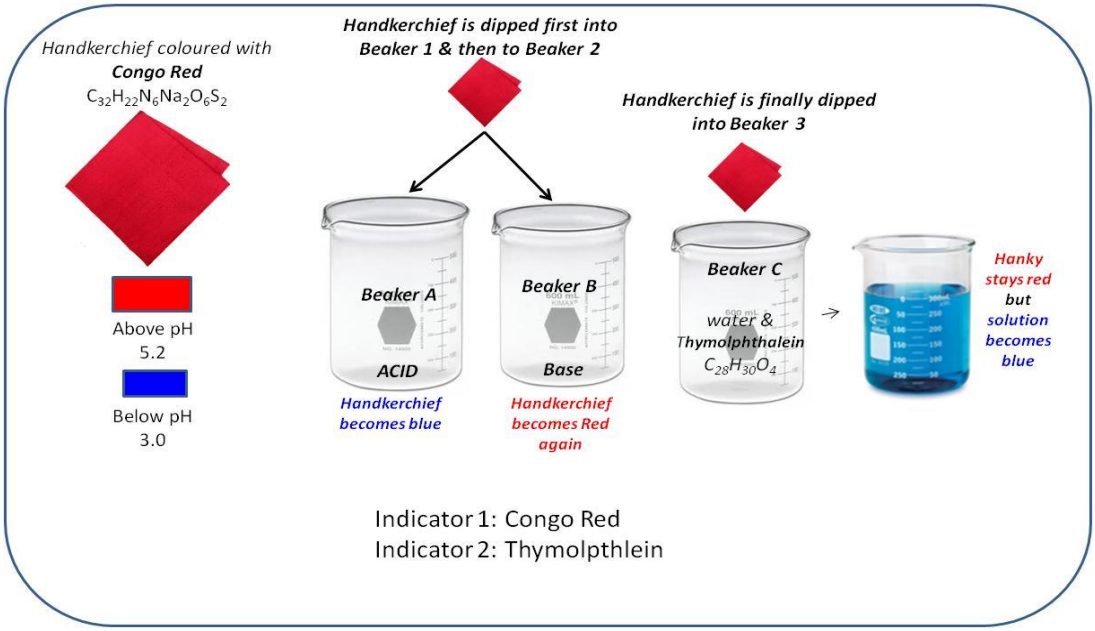
$$2Na_2S_2O_3 + I_2 = Na_2S_4O_6 + 2NaI$$

Sodium thiosulphate	Iodine Soln. Coca Cola Col.	Sodium tetrathionate Colourless	Sodium Iodide Colourless

Experiment 4:

When we put on the switch, A. C. (Alternating Current) starts flowing through the primary coil and as a result Alternating Magnetic field is created surrounding the primary coil. The Alluminium disc, which is a good conductor of Electricity, acts as a single turn secondary coil. Due to the developed alternating magnetic field in the primary coil, electromagnetic induction takes place and induced current (which is changing in nature) is produced in the secondary coil and a changing magnetic field is also produced. Due to the repulsion of the primary magnetic field and the secondary magnetic field, the disc. jumps up and levitates at a particular height, where the wt. of the disc. is balanced by the repulsive force.

Experiment 5:



Experiment 6:

When the mouth of the tube is closed by the palm, the air cannot flow out of the tube from its lower end. As a result, the bottles fall freely in the cushion of the trapped air. Frictional force due to trapped air becomes more and this Frictional force resists the bottles to fall faster. In fact, the bottles fall with uniform velocity, which is known as terminal velocity.