

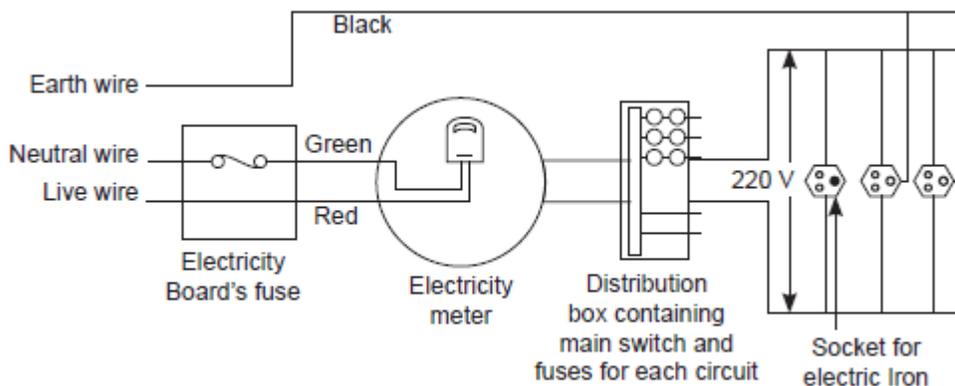
# O P JINDAL SCHOOL, SAVITRINAGAR

## CLASS TEST & PRACTICE

CLASS X PHYSICS

TOPIC : MAGNETIC EFFECT  
OF CURRENT AND  
MAGNETISM

- 1 Rajiv and Rajat were once lost in a forest. As it was a cloudy and foggy day, they had no idea of direction in which they were leading. So, Rajiv took out the magnetic compass from his bag. On seeing it, he noticed that the pointer designed to point towards North was worn off and the needle became similar at both ends. This made him broke down. Rajat consoled him and came up with an idea on seeing the flashlight and a piece of wire hanging out from Rajiv's bag. He took out the battery of flashlight and connected it with the wire. Now they came to know about the true directions. 4
- (a) How are they identified the geographical north direction ?  
(b) What is magnetic compass ?  
(c) What according to you were the values displayed by Rajat to help Rajiv?
- 2 Aishwarya once visited her uncle's house. Somehow she came to know about her uncle's illness and also about the neglect of MRI (Magnetic resonance imaging) due to its high cost. She then not only collected money from some of her family friends but also convinced her uncle for the test The reports came after the test helped the doctors to treat him well. After getting well, uncle arranged the money and returned to her saying thanks. Then her uncle did a brief research about the test and found that it was expensive because 4 of its set-up, that needs a strong magnetic fields and pulses of radio wave energy.
- (a) What were the values shown by Aishwarya and her uncle ?  
(b) How the magnetic field produced due to a circular coil depends on its radius?  
(c) State the characteristics of magnetic field lines produce by current carrying circular coil. (any two)
- 3 Rahul once went to a construction site along with his father. There he saw large cranes lifting heavy iron loads. After sometimes, he noticed that all the cranes were lifting a bunch of iron rods and unloading it to other places. He was surprised and then enquired the crane man about it. The crane man then explained the use of electricity in lifting the load. 4
- (a) According to you, which effect of electricity is used in cranes ?  
(b) How electromagnet is formed ?  
(c) Which qualities were shown by the crane man?
- 4 A novice electrician designed the following circuit for the electric wiring in a certain household. His senior, however, told him to make five important changes/corrections in this circuit. 4



(a) Identify five faults in the

above circuit.

(b) Suggest and write the five corrections needed, in brief, that you think the senior electrician must have suggested to this novice.

(c) What qualities were shown by his senior?

5 One day Suresh connected many household high power appliances having a current rating more than 6A to a multiplug of 6A rating. When he was about to switch them on, his elder sister shouted and asked him to remove the appliances from a single socket.

(a) According to you, why she would not advice to connect multi-high power appliances on a single socket ?

(b) What would have happened, if he switched them on ?

(c) What was the value shown by his sister?