

Name:.....Roll No.....

**Class-7 Subject-Science (CCT) Marks:15**

**Time:30 Minutes**

**Case No.1**

Electricity to the bulb in a torch is provided by the electric cell. Electric cells are also used in alarm clocks, wristwatches, transistor radios, cameras and many other devices. Have you ever carefully looked at an electric cell? You might have noticed that it has a small metal cap on one side and a metal disc on the other side. Did you notice a positive (+) sign and a negative(−) sign marked on the electric cell? The An Electric Cell metal cap is the positive terminal of the electric cell. The metal disc is the negative terminal. All electric cells have two terminals; a positive terminal and a negative terminal.

An electric cell produces electricity from the chemicals stored inside it. When the chemicals in the electric cell are used up, the electric cell stops. You might have seen the danger sign displayed on poles, electric substations and many other places. It is to warn people that electricity can be dangerous if not handled properly. Carelessness in handling electricity and electric devices can cause severe injuries and sometimes even death. Hence, you should never attempt to experiment with the electric wires and sockets. Also remember that the electricity generated by portable generators is equally dangerous. Use only electric cells for all activities related to electricity.

Q.1: Ravindra is doing his homework which is given by his teacher. Would you help him to choose the incorrect sentences?

- [A]. We should never join the two (positive and negative) terminals of a cell directly by a wire.
- [B]. The small electric bulb which produces light when a torch is switched on is called a torch bulb.
- [C]. The thin wire inside the bulb is called filament of the bulb.
- [D]. It is the silver of the bulb which glows when electricity from a cell is passed through it.

Q.2: Cell is a device which

- (a) converts chemical energy into electrical energy
- (b) electrical energy into light energy
- (c) electrical energy into magnetic energy
- (d) None of these

Q.3: How many terminals are there in a dry cell?

- (a) One
- (b) Two
- (c) Three
- (d) Four

Q.4: Priya is writing some statements, choose the incorrect statement and help him:

- [A]. An electric cell is a device which produces a small amount of electricity.
- [B]. The electric cell which we used in torch, etc., is commonly known as “dry cell” or “just cell”.
- [C]. The electric cell produces electricity from the chemicals stored inside it.
- [D]. When all the chemicals in electric cells are used up, the electric cell does not stop producing electricity.

Q.5: Shekhar appeared in class test but he confused to know the incorrect statement. Would you help him to know that?

- [A]. The positive terminal of electric cell is marked plus (+)
- [B]. The negative terminal of the electric cell is marked minus (-).
- [C]. We should not join the two terminals (positive and negative) of a cell directly by a wire.
- [D]. The electric cell is a cylindrical device having a small metal cap on one side which is negative terminal.

**Case No.2**

Never join the two terminals of the electric cell without connecting them through a switch and a device like a bulb. If you do so, the chemicals in the electric cell get used up very fast and the cell stops working. Use rubber bands or tape to fix the wires to the cell.

When the two terminals of the electric cell are connected to two terminals of the bulb. Such an arrangement is an example of an electric circuit. The electric circuit provides a complete path for electricity to pass (current to flow) between the two terminals of the electric cell. The bulb glows only when current flows through the circuit. In an electric circuit, the direction of current is taken to be from the positive to the negative terminal of the electric cell. When an electric bulb may fuse due to many reasons. One reason for a bulb to fuse is a break in its filament. A break in the filament of an electric bulb means a break in the path of the current between the terminals of the electric cell. Therefore, a fused bulb does not light up as no current passes through its filament.

A home-made torch terminals of the bulb are connected with that of the electric cell by wires, the current passes through the filament of the bulb. This makes the bulb glow. Sometimes an electric bulb does not glow even if it is connected to the cell. This may happen if the bulb has fused.

Q.1: A bulb has

- (a) two terminals and one filament (b) two terminals and two filaments  
(c) multiple terminals and single filament (d) single terminal and single filament

Q.2: Filament of a bulb is made up of

- (a) aluminium (b) chromium (c) platinum (d) tungsten

Q.3: Bulb glows only in

- (a) closed circuit (b) open circuit (c) in both circuits (d) open circuit if bulb is not fused

Q.4: The material present inside the bulb that glows on heating is called

- (a) cell (b) switch (c) filament (d) thick wire

Q.5: A bulb whose filament is broken is called

- (a) fused (b) glowing (c) conductor (d) none of these

### **Case No.3**

If we cannot see through an object at all, it is an opaque object. If you are able to see clearly through an object, it is allowing light to pass through it and is transparent. There are some objects through which we can see, but not very clearly. Such objects are known as translucent. Is light from a far away object able to travel to your eye, through any of the object?

Opaque depending on whether it allows light to pass through it completely, partially or not at all.

Q.1: Consider the following statements and choose the incorrect one:

- [A]. Sun is about 150 million kilometers away from us, its light makes the day time bright on the earth.  
[B]. Those sources of light which occur in nature as such are called natural sources of light.  
[C]. Those sources of light which have been made by man are called man-made sources of light or artificial sources of light.  
[D]. The sun and moon are example of luminous objects.

Q.2: Pragya is completed her science chapter where she wrote some statements. She wants to know whether the statements are correct or not? Pragya wants to take help from you:

- [A]. We can see clearly through the transparent materials.  
[B]. Those materials which allow all the light to pass through them are called transparent materials.  
[C]. If we are able to see through an object clearly it is allowing all the light to pass through it and hence it is a non-transparent object.  
[D]. None of the above

Q.3: Anushka put some tea into four cups made of paper, glass, metal and porcelain respectively. Which one of these cups will allow her to see the level of the clearly?

- [A]. Paper Cup [B]. Metal Cup [C]. Glass Cup [D]. Porcelain Cup

Q.4: We can see objects in a bright room because:

- [A]. The objects give of light to the air [B]. The objects reflect the light falling on them  
[C]. The objects send light away from our eyes [D]. Our eyes give of light to the objects

Q.5: Paheli observed the shadow of a tree at 8 a.m. 12 noon and 3 p.m. Which of the following statements is closer to her observations about the shape and size of the shadow?

- [A]. The shape of the shadow of the tree changes but the size remains the same.  
[B]. The size of the shadow of the tree changes but the shape remains the same.  
[C]. Both size and shape of the shadow of the tree changes.  
[D]. Neither the shape nor the size of the shadow changes.