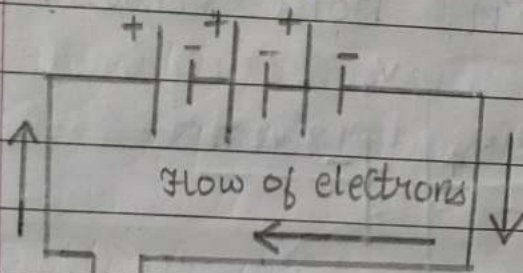


Chp. 4. Current Electricity and Magnetism.

81. Fill in the blanks.

- a.) Water in the waterfall flows from a higher level to the lower level because of gravitational attraction.
- b.) In an electric circuit, electrons flow from a point of higher potential to the point of lower potential.
- c.) The difference between the electrostatic potential of the positive end and the negative end of an electric cell is the Potential difference of the cell.
- d.) Three electric cells of potential difference 1.5V each have been connected as a battery. The potential difference of the battery will be 4.5 V.
- e.) A electric current flowing in a wire creates magnetism around the wire.

82. A battery is to be formed by joining dry cells ^{them} with connecting wires. Show how will you connect the wires by drawing a diagram.



electrical resistance

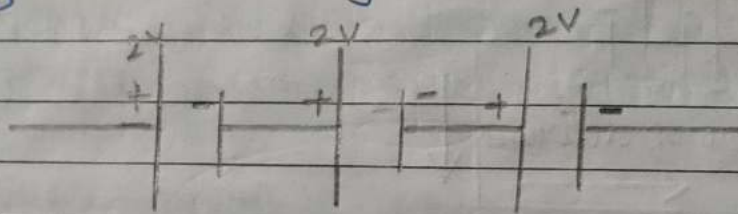
83. In one electric circuit, a battery and a bulb have been connected and the battery consists of two cells of equal potential difference. If the bulb is not glowing, then which tests will you perform in order to find out the reason for the bulb not glowing?

-
- (i) Check if electric bulb and battery are in good condition.
 - (ii) Check if the connections are proper.
 - (iii) Check if the battery is supplying enough potential.

Page 3

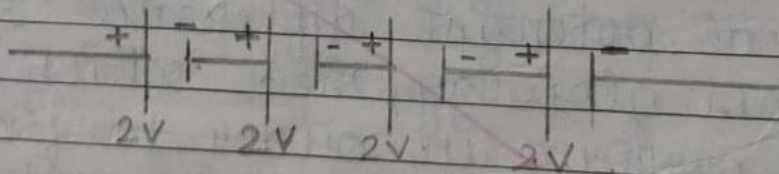
84. Electric cells having 2V potential difference each have been connected in the form of a battery. What will be the total potential difference of the battery in both cases?

(i)



$$\begin{aligned} \text{Total Potential Difference} &= 2V + 2V + 2V \\ &= \underline{6V} \end{aligned}$$

(ii)



$$\begin{aligned} \text{Total Potential Difference} &= 2V + 2V + 2V + 2V \\ &= \underline{8V} \end{aligned}$$

→ A group of two or more cells connected in series to obtain a potential difference. It is called a battery.

4.) Draw a neat labeled diagram of Dry cell.

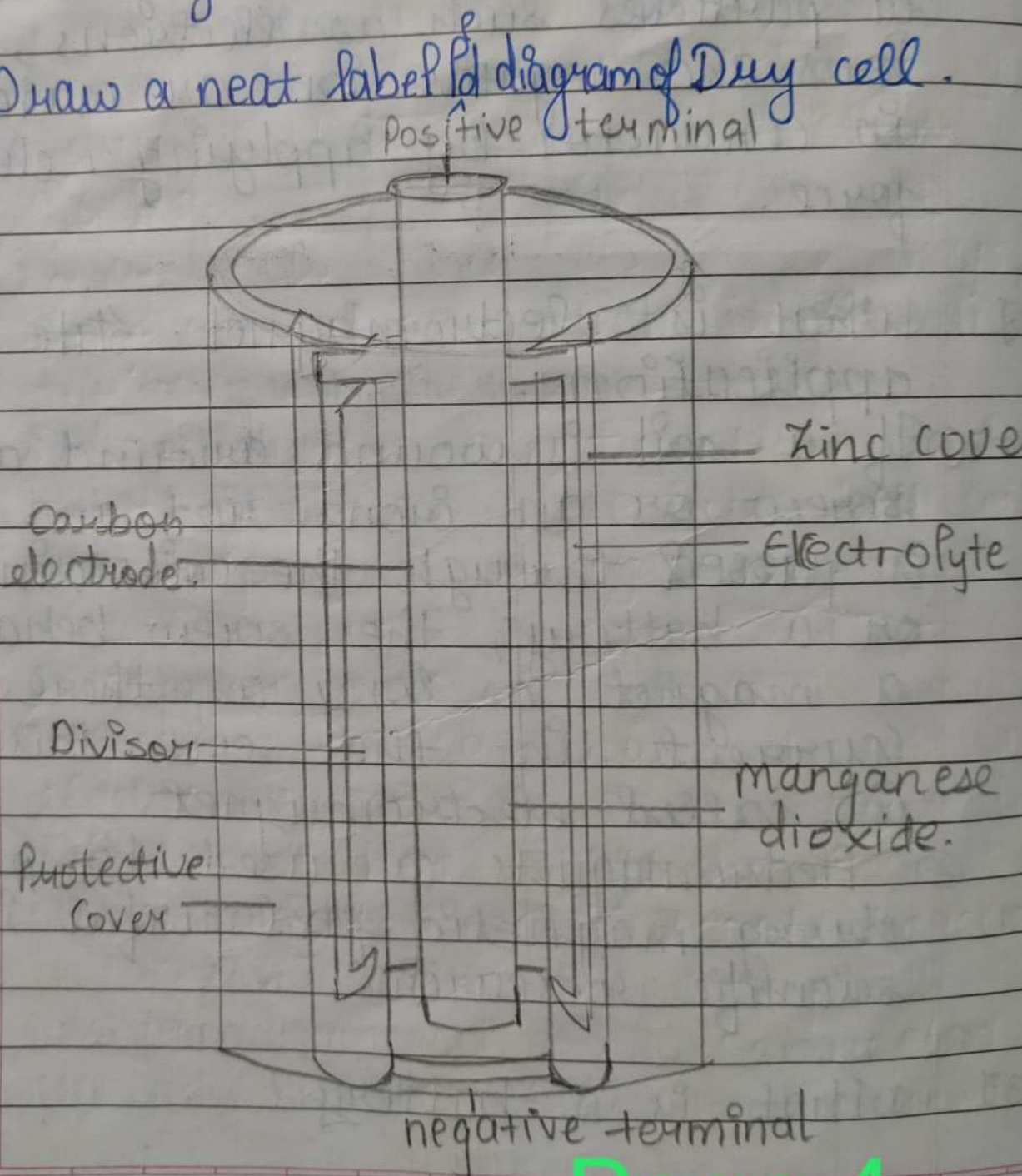


Fig 4.2 · Dry cell.

* Chp. 4. Continued Q5 onwards

Q5 Explain the structure of a dry cell.

ans :- ① In a dry cell there is a graphite rod at the centre, which acts as the positive terminal.

② The outer layer made of zinc metal acts as the negative terminal.

③ There is an electrolyte which is a wet pulp of zinc chloride ($ZnCl_2$) and Ammonium chloride (NH_4Cl) between two layers, inside a dry cell.

④ A paste of manganese dioxide (MnO_2) is also present inside a dry cell.

Q6 Explain the working of a dry cell.

ans :- Because of the chemical reactions of all these chemicals, electrical

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charge is produced on the two terminals (graphite rod and zinc layer) and an electric current flows in the circuit.

- Q7 write the uses of a dry cell.
- ① A dry cell is used in ~~electric~~ wall clocks.
 - ② Dry cells are used in toys.
 - ③ They are also used in the torches.

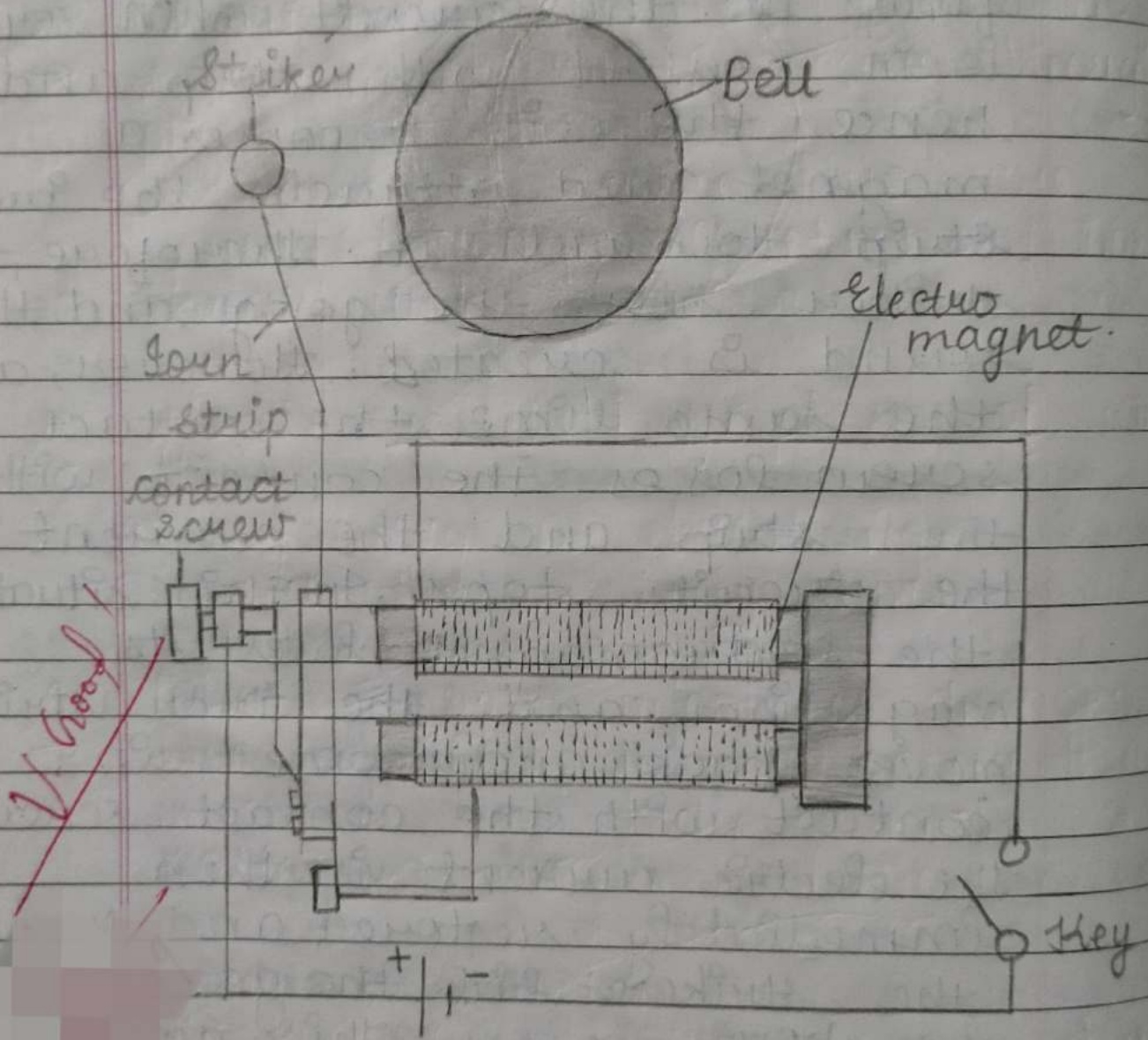
Q8. Describe the construction and working of an electric bell with the help of a diagram.

→ A copper wire is wound around an iron piece. This coil acts as an electromagnet. An iron strip along with a striker is fitted near to the electromagnet. A contact screw is in touch with the strip. The electric circuit is connected as shown in fig 4.8. The current

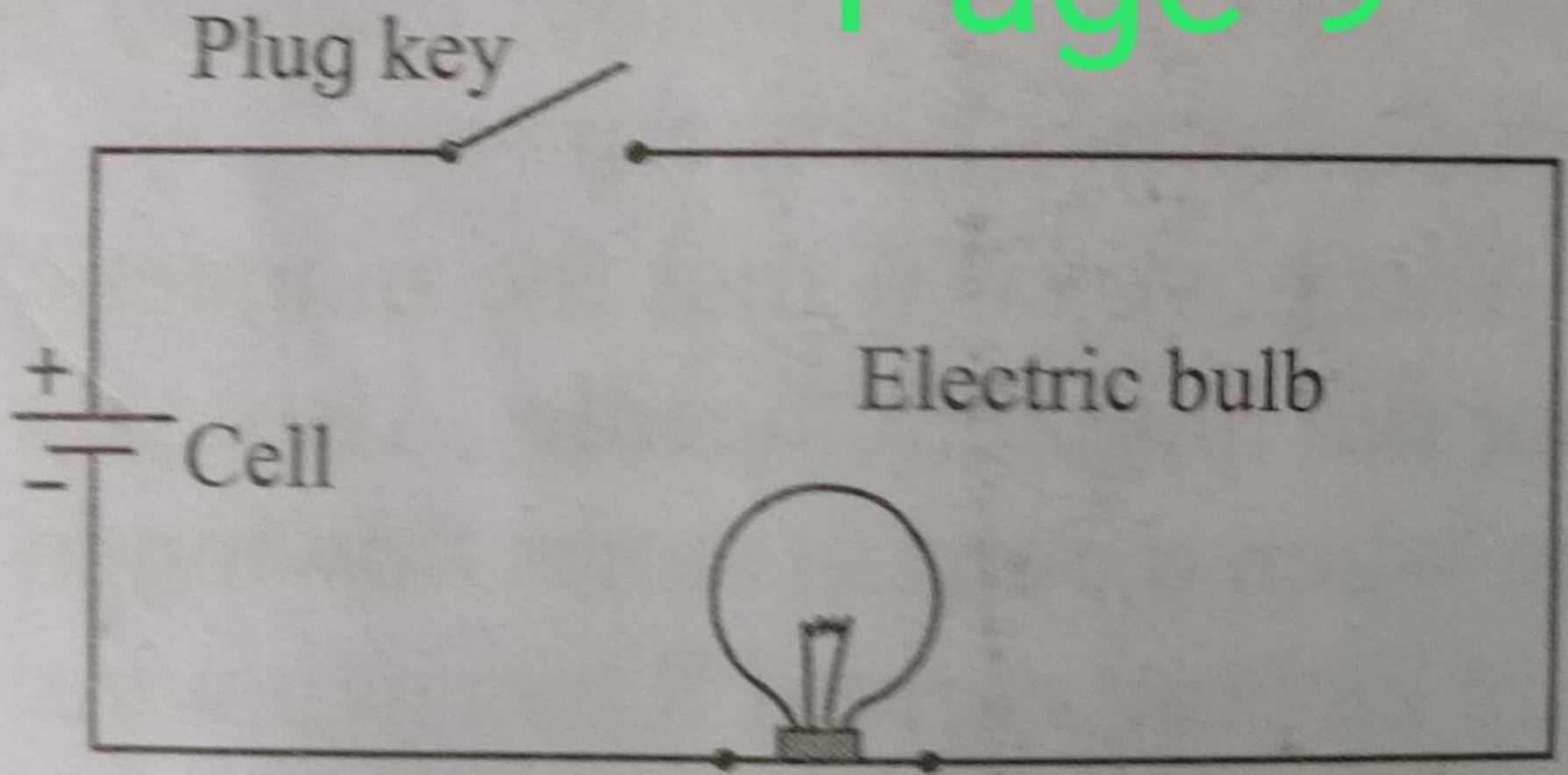
flows in the circuit when screw is in contact with strip and hence the coil becomes a magnet and attracts the iron strip towards it. Therefore, the striker hits the gong and the sound is created. However, at the same time the contact screw loses the contact with the strip and the current in the circuit stops. In this situation, the electromagnet loses its magnetism and the iron strip moves back and comes in contact with the contact screw. The electric current is then immediately restored and again the striker hits the gong by the above process. This action repeats itself and the bell rings.

* Fig. 4.8. Electric bell.

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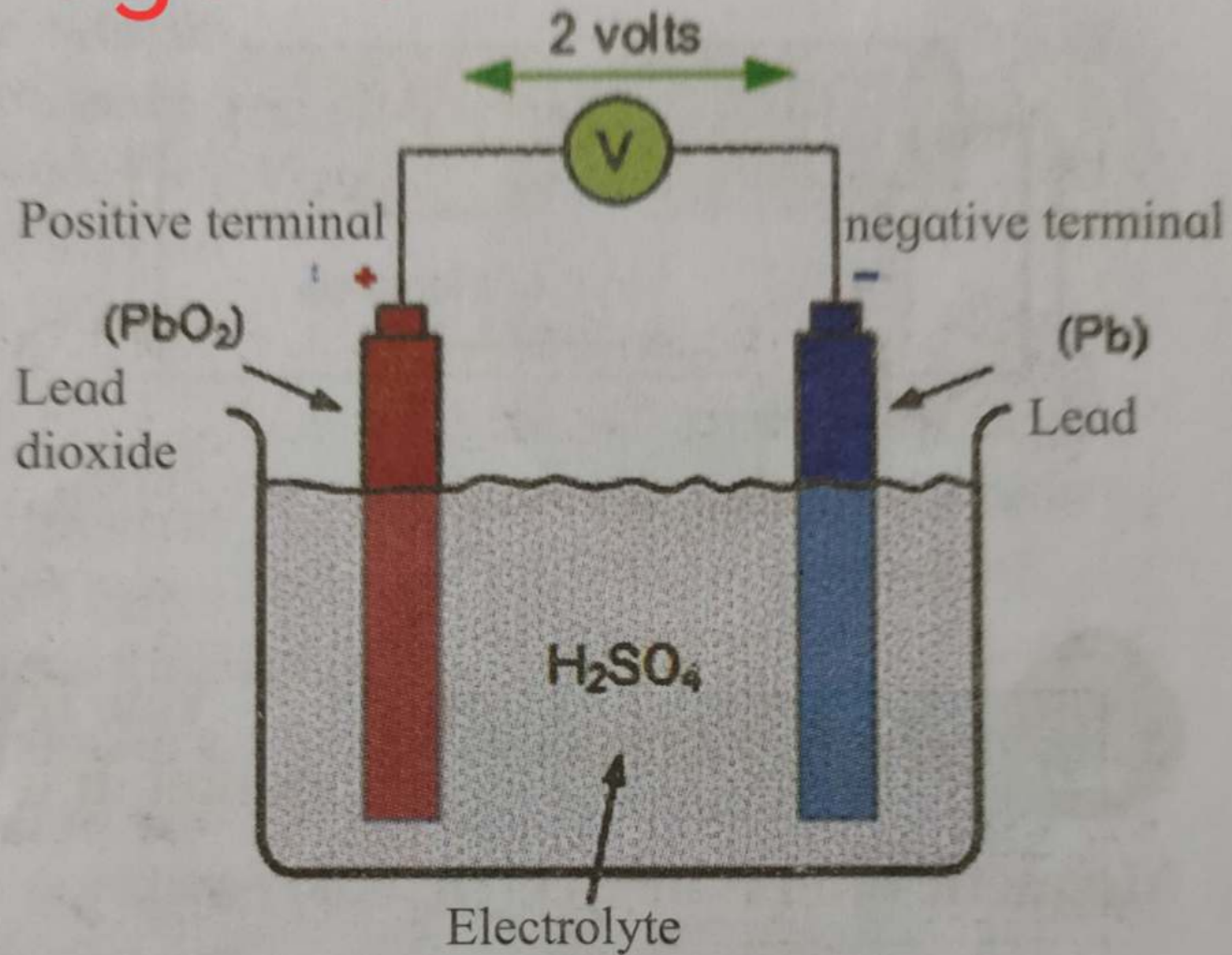


Handwritten note: ✓ Good!



4.4 (b) Simple electric circuit

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4.3 Lead-Acid Cell