ODM EDUCATIONAL GROUP
Changing your Tomorrow

ELECTRICITY

CHAPTER NO.12

SUB: PHYSICS

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LEARNING OUTCOMES

- **Students will be able to** :
- Define charge.
- Discovery of electricity, Electric charge and its properties,
- Define Electric current and circuit
- Explain electric potential and potential difference
- Draw circuit diagrams.

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POINTS TO BE COVERED

- Electric potential and potential difference.
- Electric current and circuit

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INTRODUCTION

https://youtu.be/SNlOPxZ-Ev4

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ELECTRIC CIRCUIT

https://youtu.be/nzmoGca5rXc

ELECTRIC POTENTIAL

It is defined as the amount of work done when a unit positive charge is moved from infinity to a point.

It is denoted as V

$V = w/q$.

The SI unit of electric potential is Volt.

POTENTIAL DIFFERENCE

It is defined as the work done per unit charge in moving a unit positive charge from one point to another point.

$V = w/q$.

The SI unit of electric potential difference is Volt.

1 V = 1 J /1 C

The electric potential difference between two points is said to be 1 V if 1 J of work is done in moving 1C of charge from one point to another point

Potential difference is measured by a voltmeter.

It is always connected in parallel across the two point between which the potential difference is to be measured.

NUMERICALS

1. How much work is done in moving a charge of 3C across two points having a potential difference 15 V?

ANS W = Vq. = 15 X 3 = 45 J

2. Calculate the potential difference between two terminals of a battery , if 100 J of work is required to transfer the charge of 20 C from one terminal of the battery to the other.

W = 100 J. q = 20 C.

V = W/q = 100 / 20 = 5 V.

3. How much work is done in moving a charge of 2 C from a point of 118 V to a point of 128 V.

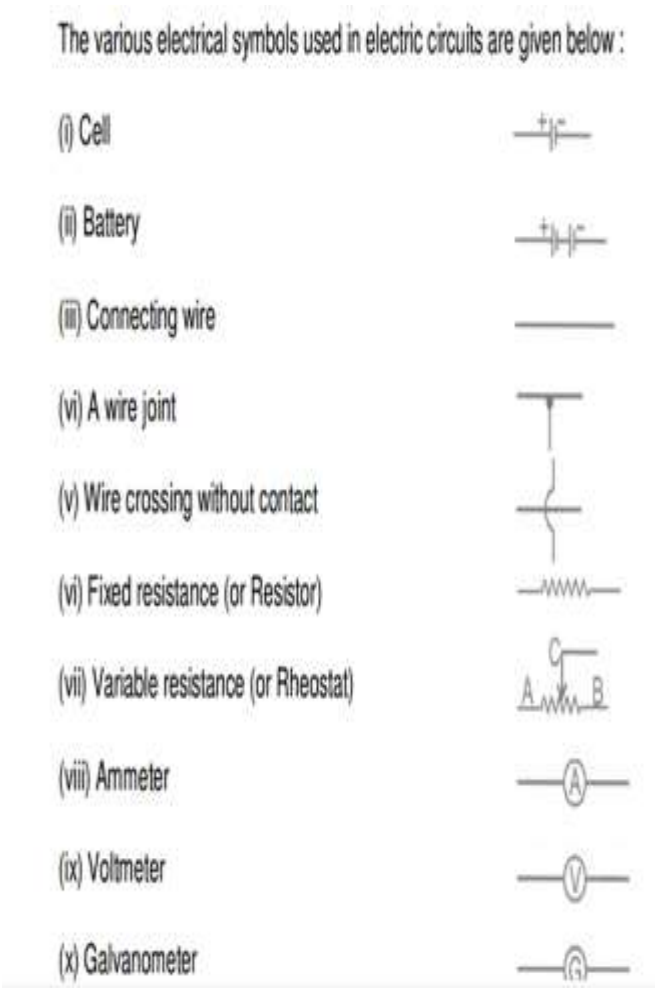
Q = 2 C. Va = 118 V. Vb = 128 V.

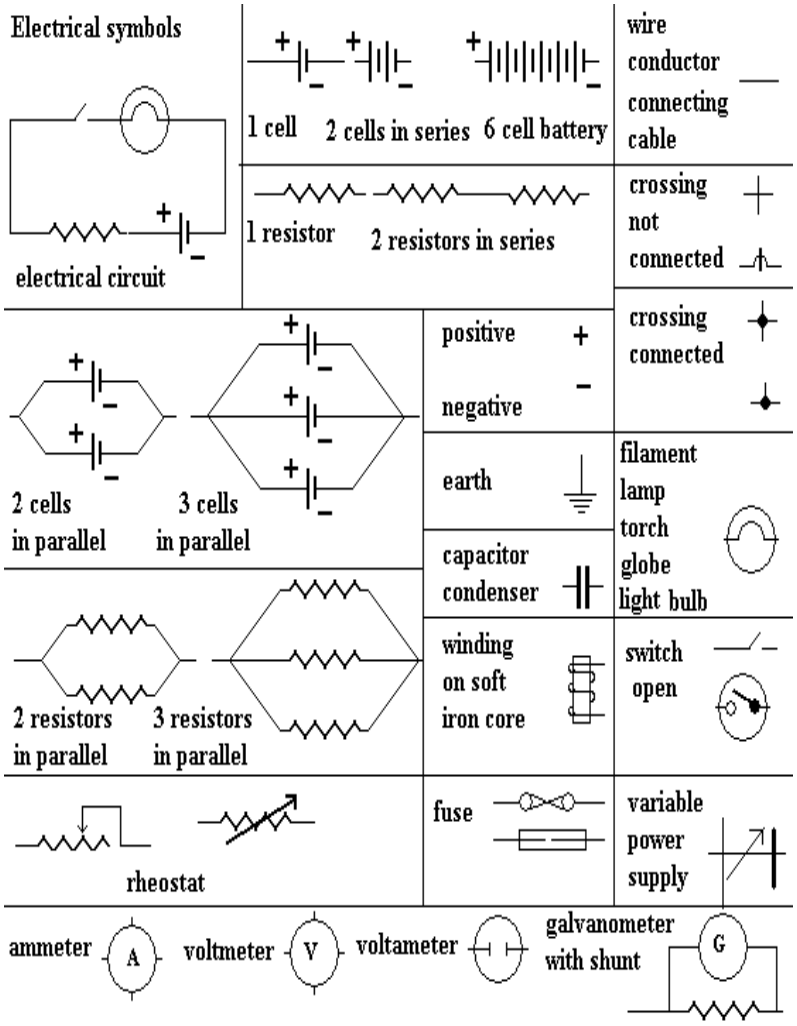
Potential difference = 128 – 118 = 10 V.

W = V q = 10 X 2 = 20 J.

ELECTRIC CIRCUIT AND CIRCUIT DIAGRAM

Electric circuit - A closed and continuous path through which electric current flows is known as electric circuit





ELECTRIC CIRCUIT

https://youtu.be/nzmoGca5rXc

OHMS LAW.

The electric current flowing through a conductor is directly proportional to the potential difference applied across its ends providing the physical conditions such as temperature remains unchanged.

$V \alpha I$

$V = IR$. Where R is a constant called resistance.

Ohmic conductors

The conductors which obey ohms law are known as Ohmic conductor.

Non ohmic conductors

The conductors which donot obey Ohms law are known as non ohmic conductors.

https://youtu.be/ldNPl67x-E8

THANKING YOU

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