# Study Point Coaching Classes

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Name: _____

Class: _____ Batch: _____

Mob.No.: _____

Test Date: _____

School: _____

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Student's Signature                    Teacher's Signature

## WEEKLY TEST PAPER- PHYSICS (CLASS-10)

## SYLLABUS - ELECTRICITY

**Time allowed: 2 Hours**                                                                 **Maximum Marks: 80**

**GENERAL INSTRUCTIONS:**

(i) This paper is divided into three sections: A,B and C. All the sections are **compulsory.**

(ii) The intended marks for questions or parts of questions are given in brackets ()

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## SECTION-A

Q.1- Choose the correct answer in each of the following questions:

1. The value of one micro ohm is                                             (2.5M x 12=25M)

(a) $10^{-9}$ ohm

(b) $10^{-6}$ ohm

(c) $10^{-3}$ ohm

(d) 1 ohm

2. If two resistances of resistance R is connected in parallel arrangement and a resistance R is connencted in the series of the above, then the resultant resistance will be:

(a) 3 R

(b) 2 R

(c) 3R/2

(d) R/2

3. 1 electro-volt is equivalent to:

(a) $1.6 \times 10^{-18}$ joule                          (b) $3.2 \times 10^{-24}$ joule

(c) $3.6 \times 10^{16}$ joule                           (d) $1.6 \times 10^{18}$ joule

4. Which one of the following statements,does not express ogm's law?

(a) Current/potential difference =constant          (b) Potential difference/current=constant

5. The equivalent resistance of n conducting wire,each of resistance of 4 ohm connected in parallel arrangement will be:

(a) 4n                    ( b) 4/n                    (c) n/4                    (d) $4n^2$

6. The powers of two electric bulbs are 100 W and 220W.Both of these are connencted to 220 volt mains.The ratio of the resistance of filaments of the bulbs is:

(a) 1:2                   (b) 2:1                    (c) 1:4                    (d) 4:1

7. The filament of electric bulb is made up of tungsten because:

(a) Its resistance is negligible                          (b) Its melting point is very high

(c) Its melting point is very low

(d) Its filament is made easily

8. The wire of heater must be made up of such a material,which has:

(a) High specific resistance and high melting point]

(b) High specific resistance and low melting point

(c) Low specific resistance and high melting point

(d) Low specific resistance and low melting point

9. If a person has five resistors each of value $\frac{1}{5}\Omega$ , then the maximum resistance he can obtain by connecting them is

(a) 1 $\Omega$

(b) 5 $\Omega$

(c) 10 $\Omega$

(d) 25 $\Omega$

10. A cyclindrical conductor of length 'I' and uniform area of cross section 'A' has resistance 'R'. The area of cross section of another conductor of same material and same resistance but of length '2I' is

(a) $\frac{A}{2}$

(b) $\frac{3A}{2}$

(c) 2A

(c) 3A

11. When a 4V battery is connected across an unknown resistor there is a current of 100 mA in the circuit.The value of the resistance of the resistor is:

(a) 4 $\Omega$                (b) 40 $\Omega$                (c)400 $\Omega$                (d) 0.4 $\Omega$

12. Two LED bulbs of 12W and 6W are connected in the series. If th current through 12W bulb is 0.06A the current through 6W bulb will be:

(a) 0.04A                (b) 0.06A                (c) 0.08A                (d) 0.12A

## SECTION-B

Q.2- Short Answers:                                                    (3M x 10=30M)

1. In a conductor AB electrons are flowing from end A to end B.Write the direction of current.

2. Write the formula relaying charge (q), current (i) and time (t).

3. The radii of two wires of same length and the same metal are $r_1$ and $r_2$.Find the ratio of their resistances

4. If the length of a wire is made three time,its initial length by stretching it.What will be its resistance?

5. What will be the equivalent resistance of $n$ resistances of resistance $r$ ohm is connected in series ?

6. 7 resistances,each of resistances $'r'$ ohm are connected in series.What will be their equivalent resistance?

7. Define electric current.

8. List three factors which the resistance of the conductor depends.

9. Write the SI unit of resistvity.

10. Assertion (A): The metals and alloys are good conductors of electricity.

Reason (R): Bronze is an alloy of copper and tin and it is not a good conductor of electricity.

(a) Both (A) and (R) are true and (R) is the correct explanation of the assertion (A).

(b) Both (A) and (R) are true,but (R) is not the correct explanation of the assertion (A).

(c) (A) is true but (R) is false.

(d) (A) is false but (R) is true.

### SECTION-C

Q.3- Long answer type questions (DO ANY FIVE)           (5M x 5=25M)

1. Draw a schematic diagram of a circuit consisting of a battery of 3 cells of 2V each,a combination of three resistors of 10 $\Omega$, 20 $\Omega$, and 30 $\Omega$ connected in parallel ,a plug key and an ammeter,all connected in series.Use this circuit to find the value of the following:
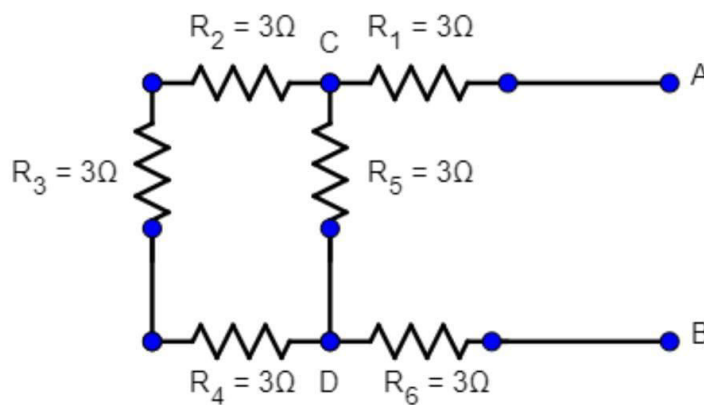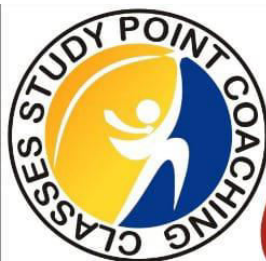
(a) Current through each resistor

(b) Total current in the circuit

(c) Total effective resistance of the circuit

2. Define resistance of the conductor. State the factors on which resistance of a conductor depends. Name the device which is often used to change the resistance without the voltage source in an electric circuit. Calculate the resistance of 50cm length of wire cross sectional area 0.01 square mm and of resistivity $5 \times 10^{-8} \Omega$ m .

3. List the factors on which the resistance of a conductor in the shape of wire depends.

4. Why are alloys commonly used in electrical heating devices? Give reason.

5. Calculate the resistance of metal wire of length 2m and area of cross section $1.5 \times 10^6$ $m^2$, If the resistivity of the metal be $2.8 \times 10^{-8} \Omega$ m .

6. A current of 10 A flows through a conductor for two minutes:

(i) Calculate the amount of charge passed through any area of cross section of the conductor.

(ii) If the charge of an electron is $1.6 \times 10^{-19}$ C. Then calculate the number of electrons flowing.

7. Calculate the equivalent resistance between AB.