

Hari Vidya Bhawan
Worksheet - 4
Class- IX
Subject: Information Technology
L-1 Communication Skills - 1

Date: 3.04.20

Q1. Write the appropriate kind of sentence for the following:-

Sentence	Declarative, Imperative, interrogative, Or Exclamatory
1. Have you read this newspaper article?	Interrogative
2. We are late for the meeting.	Declarative
3. Stop that right now!	Imperative
4. Remember to watch your step as you leave the room.	Imperative
5. Are the packages here yet?	Interrogative
6. Teacher Mathew said that the situation would improve.	Imperative
7. Leave that old plates in the closet.	Imperative
8. The desert was awesome!	Exclamatory
9. Painting is a relaxing hobby.	Declarative
10. These are the best seats in the stadium!	Exclamatory
11. Please accept my apology.	Imperative
12. Your face is frightening the baby!	Exclamatory
13. My doctor told me to take these vitamins.	Imperative
14. Did you solve the puzzle yet?	Interrogative
15. Its hard to believe that this paper is made from wood.	Declarative
16. There are more apples in the refrigerator.	Declarative
17. We are on the wrong planet!	Exclamatory
18. I would send her a gift if I were you.	Imperative
19. Send her a nice gift.	Imperative
20. My sister lives in Mumbai.	Declarative

Q2. Fill the appropriate articles in the following sentences :-

1. She has a parrot.
2. What is the name of the next station?
3. Can I have an airplane?
4. The earth is round.
5. Dibesh is wearing a blue dress with red shoes.
6. Would you like to see the film?
7. Is there a cash machine near here?
8. She is an English teacher.

9. Christmas comes once a year.
10. I recommend you try the tomato soup at this restaurant.
11. Kartik and yash went to the party last night.
12. This is an easy question.
13. Payal could you speak a little louder.
14. May I ask you the question?
15. Do you have the dictionary that I can borrow.
16. Sudhir is an engineer.
17. Shrihari is the best teacher in our school.

Q3. Classify these sentences according to their function. On the line following each sentence, write declarative, interrogative, imperative or exclamatory.

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| 1. What a wonderful poem that is ! | <u>Exclamatory</u> |
| 2. Seema, please read the first poem in this collection. | <u>Imperative</u> |
| 3. These poems are about nature, and those are about people. | <u>Declarative</u> |
| 4. Yash, give us your opinion. | <u>Imperative</u> |
| 5. Does anyone have anything to add? | <u>Interrogative</u> |

Activity :-

Write a brief paragraph about any one of the story in your text books. In your paragraph, use atleast one of each kind of sentence. Write a **D** above each declarative sentence, **Int** about each interrogative sentence, **Imp** above each imperative sentence and **E** above each exclamatory sentence. Be sure to **Capitalize** and punctuate each sentence. (Do it in the Notebook)

HARI VIDYA BHAWAN

Subject: English

Class-IX

Work sheet-4

Grammar-Reading (Section-A)

DATE:- 03/04/2020

Q 1- Read the passage given below and answer the question that follow:-

Today budgies-often called lovebirds in India -are the most popular pet birds in the world. All the adored cage birds of today are the descendants of parrots. They are one of the smallest of the world's 330 parrot species which have come down from a plucky little bird in rural Australia.

Some appear to be about 30 cm long from tail tip to crown, with bulbous, fluffy foreheads, barrel chests and deep-set eyes. Their colours are striking; vivid shades of blue, grey and green as well as violet and white. Most startling of all are the yolk- yellow birds, called Latinas that are like splashes of luminous paint. The first colour mutations in captive birds were blue and yellow. Today, breeders raise birds with rainbow of colours.

Love birds stay near water when it's dry, but when there's a lot of rain they spread out. They are sometimes seen nestling on top of tall eucalyptus trees. While some of the caged varieties would have difficulty flying across a room, wild budgies travel hundreds of kilometers at speeds of up to 50 kilometers per hour to seek seed and water. Even in prolonged droughts, the budgie has an extraordinary ability to withstand dehydration. When deprived of water, budgies can reportedly exist with little weight loss for more than a month at an average air temperature of 30 degrees. At 20 degrees, some can apparently survive' indefinitely without water, provided they are getting some moisture from food. Male budgies can be excellent mimics and can develop huge vocabularies. Hens may whistle and can learn a few words, but they are not nearly as loquacious as males. Budgies are diamorphic upon sexual maturity. Adult males of most colours, except albino and the very pale pastels, develop a blue colour. Hens have a lilac or tan colour that turns brownish upon maturity.

Attempt following question on the basis of the passage you have read:-

- (a) Name the most popular pet birds in the world?
- (b) Who were the ancestors of the caged birds?
- (c) Where do love birds stay during dry weather?
- (d) What do you know about the travelling capacity of budgies?
- (e) Why according to the author, are budgies tough birds?

Q2. Read the passage given below and answer the question that follow:-

1. Bhoodan (land gift) is one of the most inspiring movement of past –independent India, started by Acharya Vinoba Bhave(1894-1982). A favourite disciple of Mahatma Gandhi,

young Vinoba when only 10 years old vowed to remain a Brahmachari and served his country. He was greatly moved by the pitiable plight of the landless peasants and made it his life's mission to improve their conditions.

2. In 1951, Vinoba Bhave began his padayatra for Bhoodan from Pochampalli village in Andhra Pradesh. He appealed to the land-rich Zamindars to donate one sixth of their land for the landless families. "I have come to rob you with love," he said to them at his meeting, "I want you to with your surplus land for the landless."
3. His appeal had a tremendous response. In eighteen years, this 'walking saint' collected 4.2 million acres as gifts from 6,00,000 donors.
4. The Bhoodan movement has paved the way for several land reforms. Laws have been passed stipulating a ceiling on land holdings.
5. Vinoba Bhave was a linguist and a gifted scholar. His best known work, talks on the Gita, is a collection of discourses which he delivered to prisoners during his imprisonment in British jail.

Attempt following question on the basis of the passage you have read:-

- 1) What does the term 'Bhoodan' mean?
- 2) What was Vinoba Bhave's mission in life?
- 3) What did Vinoba Bhave appeal to the Zamindars of Andhra Pradesh?
- 4) How can you say that his appeal had a tremendous response?
- 5) What is Vinoba Bhave's best known work?

HARI VIDYA BHAWAN

Worksheet-5

Class-X

Subject-Science

Session-2020-21

Ch-12: Electricity

Date:03/04/2020

Factors On Which The Resistance Of A Conductor Depends

Resistance of a conductor depends on the following factors:

(i) Length of the conductor: Resistance of a conductor is directly proportional to its length. So, when length of the wire is doubled, its resistance also gets doubled; and if length of the wire is halved its resistance also gets halved.
Thus a long wire has more resistance than a short wire.

(ii) Area of cross -section: Resistance of a conductor is inversely proportional to its area of cross-section. So, when the area of cross-section of a wire is doubled, its resistance gets halved; and if the area of cross-section of wire is halved then its resistance will get doubled.
Thus a thick wire has less resistance and a thin wire has more resistance.

(iii) Nature of material: Resistance of a conductor also depends on the nature of the material of which it is made. For example a copper wire has less resistance than a nichrome wire of same length and area of cross-section.

(iv) Effect of temperature: Resistance of a conductor is directly proportional to The temperature.

Resistance of a uniform metallic conductor is directly proportional to its length and inversely proportional to the area of cross-section (A). That is,

$$R \propto l \text{ and } R \propto \frac{1}{A}$$

Or,

$$R \propto \frac{l}{A}$$

Or,

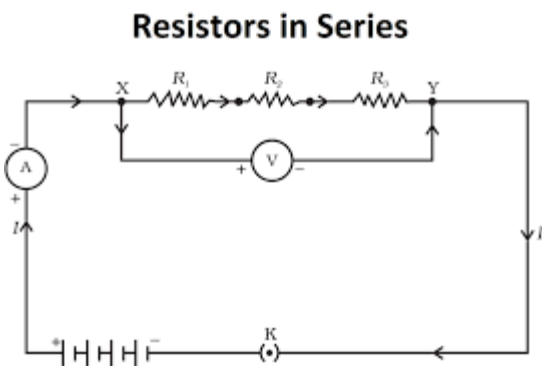
$$R = \rho \frac{l}{A}$$

- Where ρ is the constant of proportionality and is called the electrical **resistivity** of the material of the conductor.

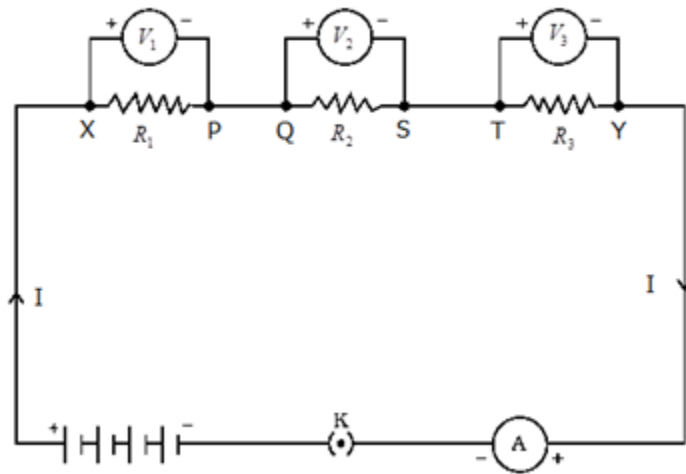
- **The SI unit of resistivity is ohm-metre ($\Omega \text{ m}$).** It is a characteristic property of the material.
- Resistivity does not change with change in length or area but it changes with change in temperature.
- **Coils of electric toaster and irons made of an alloy rather than a pure metal** because the resistivity of an alloy is much higher than that of pure metal and an alloy does not undergo oxidation easily even at high temperature.
- Resistivity of conductors is very low whereas the insulators have a very high resistivity.
- Copper and aluminium are used for electrical transmission lines due to low resistivities.
- **Tungsten is used in filament of electric bulbs** because tungsten has high resistivity and high melting point (nearly 3000°C)
- **Resistivity of Conductors < Resistivity of Alloys < Resistivity of Insulators**

Resistors in series:

- When two or more resistors are connected end to end, the arrangement is called series combination.



- The current through the circuit remains the same.
- The potential difference becomes sum of the individual potential difference across each resistor.
- Equivalent resistance of the circuit is the sum of individual resistances



Total / overall resistance in series : $R_s = R_1 + R_2 + R_3$

Total voltage = sum of voltage drops

$$\mathbf{V = V_1 + V_2 + V_3}$$

- On applying Ohm's law to the three resistors separately we have, (Voltage across the each resistor)

$$\mathbf{V_1 = IR_1 \quad ; \quad V_2 = IR_2 \quad ; \quad V_3 = IR_3}$$

$$\mathbf{V = V_1 + V_2 + V_3}$$

$$\mathbf{IR = IR_1 + IR_2 + IR_3}$$

$$\mathbf{IR = I (R_1 + R_2 + R_3)}$$

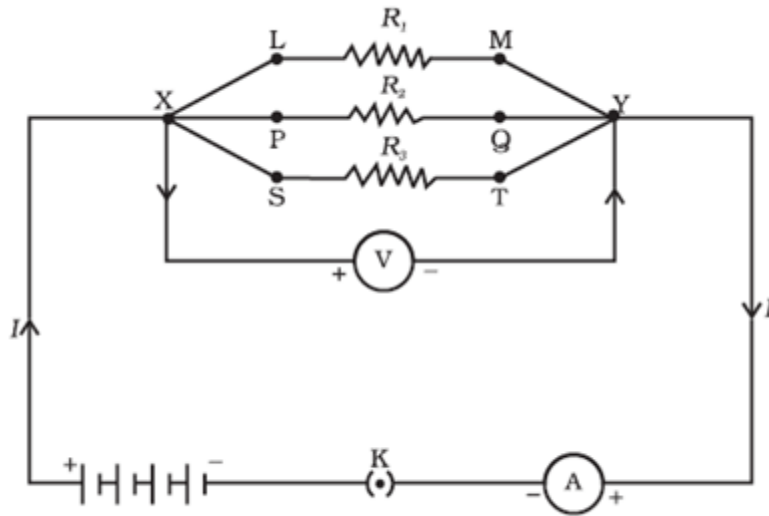
$$\mathbf{R = R_1 + R_2 + R_3}$$

- **Disadvantages of series arrangement of resistors:**

- Two different electrical appliances, having different current requirements, cannot be connected in series as the current is constant in a series circuit.
- If one electrical appliances get damaged or or stops working , the circuit gets broken and all other appliances also stop working.
- The overall resistance of the circuit increases due to which the current from the power Supply is low.

Resistors in parallel

- When two or more resistors are connected in parallel:



- Total current through the circuit is the sum of currents through the individual resistance. $I = I_1 + I_2 + I_3$
- The potential difference across the two points of the circuit remains the same.
- The reciprocal of equivalent resistance of the circuit is the sum of reciprocal of the individual resistances.

Let R_p is the equivalent resistance of the parallel combination ,

On applying Ohm's law to the three resistors separately we have,

$$I_1 = V / R_1 \quad ; \quad I_2 = V / R_2 \quad ; \quad I_3 = V / R_3$$

$$I = I_1 + I_2 + I_3$$

$$V / R_p = V/R_1 + V/R_2 + V/R_3$$

$$1/R_p = 1/R_1 + 1/R_2 + 1/R_3$$

- Advantages of parallel arrangement of resistors:**

- Parallel arrangement divides current in different branches and hence each component receives the required amount of current.
- If one electrical appliances stops working , then all other appliances Keep working normally.
- The overall resistance of the household circuit is reduced due to which the current from the power supply is high.

- **Solving Problems Using The Formulae Of Resistivity:**

Example 1: Compute the resistivity of the given material whose resistance is 2Ω , area of cross sections & length are 25 cm^2 and 15 cm respectively.

Solution: $R = 2 \Omega$; $L = 15 \text{ cm} = 0.15 \text{ m}$; $A = 25 \text{ cm}^2 = 0.25 \text{ m}^2$

$$R = \rho (l / A) \quad ; \quad \rho = RA / l$$

$$= 2 \times 0.25 / 0.15 = 3.333 \Omega$$

- **Solving Problems Using The Formulae Of Combination Of Resistors:**

Example 2: A battery of 9 V is connected in series with resistors of 0.2Ω , 0.3Ω , 0.4Ω , 0.5Ω and 12.0Ω respectively. How much current would flow through the 12Ω resistor?

Solution: Resistors are connected in series.

$$\text{So, equivalent resistance } R_s = R_1 + R_2 + R_3 + R_4 + R_5$$

$$R_s = 0.2 + 0.3 + 0.4 + 0.5 + 12$$

$$= 13.4 \Omega$$

Potential difference, $V = 9 \text{ V}$; Current through the circuit, $I = \frac{V}{R} = \frac{9}{13.4}$

$$= 0.67 \text{ A}$$

Practice Questions:

- The length of the conductor is halved, its resistivity will be
 - halved
 - unchanged
 - doubled
 - one-fourth
- On what factors does the resistance of a conductor depend?
- Why is the series arrangement not used for domestic circuit?
- The length and area of a wire is given as 0.2 m and 0.5 m^2 respectively. The resistance of that wire is 3Ω . Find out the resistivity.
- An electric lamp of 100Ω , a toaster of resistance 50Ω , and a water filter of resistance 500Ω are connected in parallel to a 220 V source. What is the resistance of an electric iron connected to the same source that takes as much current as all three appliances, and what is the current through it? [Hint: Check the answer from NCERT exercise solution]
- Why are copper and aluminium wires usually employed for electricity transmission? [Hint: Check the answer from NCERT exercise solution]
- (i) Which among iron and mercury is a better conductor?
(ii) Which material is the best conductor? [Hint: Check the answer from NCERT exercise solution]
- What is (i) the highest, (ii) the lowest total resistance that can be secured by combination of four coils of resistance 4Ω , 8Ω , 12Ω , 24Ω ? [Hint: Check the answer from NCERT exercise solution]

Activity: Draw the circuit diagram of an electric circuit containing a 8 V battery, a key , an ammeter , a resistor of 4Ω in series with a combination of two resistors (8Ω each) in parallel and a voltmeter across the parallel combination .

(i) Find out the resistance of two 8Ω resistor in the combination.

(ii) Current flowing through 4Ω resistor.