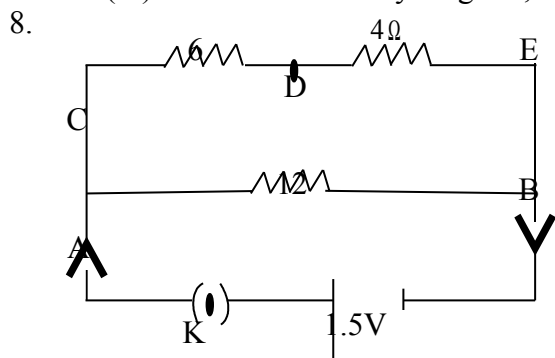


PHYSICS

Marks :20

- Name the defect of vision caused by:
 - Cornea is not perfectly spherical
 - Power of accommodation of eye decreases. (1)
- Why Nichrome element is commonly used in household appliances. (1)
- What are hot spots? (1)
- An electric motor takes 5A from a 220V line. Determine the power of the motor and the energy consumed in 2hours. (2)
- What is electromagnetic induction?
 - How much force is exerted by a magnetic field on a stationary charge? (2)
- What do you mean by OTE? Write the full form of OTE. (2)
- What is long sightedness? (3)
 - List two causes for development of long sightedness.
 - Describe with a ray diagram, how this defect may be corrected by using spectacles? (3)



In the given circuit diagram, calculate:

- The current flowing through the arms AB, AC and CDE.
 - The potential difference across AB, CD and DE
9. Describe the formation of different types of images by a convex lens: (5)
- Object is placed between the optical centre and the focus.
 - Object is beyond centre of curvature.
 - Object is at infinity.
- (OR)
- Draw a ray diagram to show the image formed by a concave mirror when an object is placed between the pole and the focus of the concave mirror.
 - A small candle 2.5 cm in size is placed 27cm in front of a concave mirror of radius of curvature 36cm. At what distance from the mirror should a screen be placed in order to receive a sharp image? Describe the nature and size of the image.

CHEMISTRY

Marks :20

- Alloys are used in electrical heating devices rather than pure metals. Give one reason. (1)
- Tooth enamel is the hardest substance in our body. How does it undergo damage and what should we do to prevent it? (1)
- A metal M forms an oxide of formula M_2O_3 . The metal belongs to 3rd period in the modern periodic table. Write the atomic number and valency of the metal (1)
- An organic compound burns with sooty flame. Is it a saturated or unsaturated compound? (1)
- Tap water conducts electricity whereas distilled water does not. Why? (1)
- Identify the substance oxidized and reduced in the chemical reaction:
 $MnO_2 + 4 HCl \longrightarrow MnCl_2 + Cl_2 + 2H_2O$ (1)
- A student dropped a piece of marble in dilute hydrochloric acid contained in a test tube. The evolved gas was passed through lime water. What change would be observed in lime water? Write balanced chemical equations for both the changes observed (2)
- Answer the following : (3)
 - Why is plaster of Paris written as $CaSO_4 \cdot \frac{1}{2} H_2O$? How is it possible to have half a water molecule attached to $CaSO_4$?
 - Why is sodium hydrogen carbonate an essential ingredient in antacids?
 - When electricity is passed through an aqueous solution of sodium chloride, three products are obtained. Why is the process called chlor-alkali?

9. Atomic number is considered to be a more appropriate parameter than atomic mass for classification of elements in a periodic table. Why?

How does atomic size of elements vary on moving from:

- (i) left to right a period
- (ii) from top to bottom in a group.

Give reasons for your answers.

(3)

10. An organic compound 'A' is used to preserve pickles. It has a molecular formula $C_2H_4O_2$. 'A' reacts with ethanol to form a sweet smelling

- (i) Identify the compound 'A'
- (ii) Write the chemical equation for the formation of the compound 'B'
- (iii) How can we get compound 'A' from 'B'
- (iv) Name the process and write corresponding chemical equation.
- (v) Which gas is formed when 'A' reacts with washing soda? Write the chemical equation.

BIOLOGY

Marks :20

1. Give two examples of conventional sources of energy.

(1)

2. Which two of the following are non-biodegradable: Paper, DDT, Cowdung, Plastic bag (1)

3. Give the full form of (i) OCs (ii) AIDS (iii) NGO (iv) HIV

(2)

OR

Write two functions each of (i) Testis and (ii) Ovaries.

4. Why there are greater chances of accumulation of harmful chemicals in the body of human beings?

(2)

5. How are forests useful to us? How do the forests get depleted? What are its consequence?(3)

6. What are homologous organs? How do they provide evidence in support of evolution? (3)

7. Describe the asexual reproduction in Amoeba.

(OR)

(3)

Describe fragmentation in Spirogyra.

8. Describe with a labeled diagram the excretory system in human beings.

(5)