CBSE Class 10 Science Question Paper 2020 Set 2

SCIENCE BOARD EXAM – SET 2

General Instructions:

Read the following instructions very carefully and strictly follow them:

i. This question paper comprises four sections – A, B and C. There are 30 questions in the question paper. All questions are compulsory.

ii. Section A: Question numbers 1 to 14 – all questions or part thereof are of one marl each.These questions comprise multiple choice questions(MCQ), Very Short answer(VSA)and Assertion-Reason type question.Answer to these questions should be given in one word or one sentence.

iii. Section B: Question numbers 15 to 24 are short answer type questions, carrying 3 marks each. Answer to these questions should not exceed 50 to 60 words.

iv. Section C: Question numbers 25 to 30 are long answer type questions, carrying 5 marks each.Answer to these questions should not exceed 80 to 90 words

v. Answer should be brief and to the point. Also the above mentioned word limit be adhered to as far as possible.

vi. There is no overall choice in the question paper. However, an internal choice has been provided in some questions in each section. Only one of the choices in such questions have to be attempted.

In addition to this, separate instructions are given with each section and question, wherever necessary.

SECTION - A **14 × 1 = 14 MARKS]**

1. Which oil should be chaser for cooking to remain healthy?
2. Define the term induced electric current.
3. Answer question numbers 3(a) – 3(d) on the basis of your understanding of the following paragraph and the related concepts.

   Around the year 1800, only 30 elements were known Dobereiner in 1817 and Newlands in 1866 tried to arrange the then known elements and framed laws which were rejected by the scientists. Even after the rejection of the proposed laws, many scientists continued to search for a pattern that correlated the properties of elements with their masses.

   The main credit for classifying elements goes to Mendeleev for classifying elements goes to Mendeleev for his most important contribution to the early development of a periodic table of elements where in he arranged the elements on the basis of their fundamental property, the atomic mass and also on the similarity of chemical properties. The format of their hydrides and oxides were treated as basic criteria for the classification of the elements. However, Mendeleev's classification also had some limitations as it could not assign the position to isotopes. He also left some gaps in the periodic table.

   3(a). State Mendeleev's periodic law.

3(b). Why did Mendeleev leave some gaps in the periodic table?

3(c). If the letter 'R' was used to represent and of the elements in the group, then the hydride and oxide of carbon would respectively be represented as

(i) RH_4, RO (ii) RH_4, RO_2 (iii) RH_2, RO_2 (iv) RH_2, RO

3(d). Isotopes are

(i) Atoms of elements with similar chemical properties but different atomic masses.
(ii) Atoms of different elements with similar chemical properties but different atomic masses.
(iii) Atoms of elements with different chemical properties but same atomic masses.
(iv) Atoms of different elements with different chemical properties but same atomic masses.

4. Answer question numbers 4(a) – 4(d) on the basis of your understanding of the following paragraph and the related studied concepts:

India today is facing the problem of overuse of resources, contamination of water and soil and luck of methods of processing the waste. The time has come for the world to say goodbye to "single-use plastics". Steps must be undertaken to develop environment -friendly substitutes, effective plastic waste collection and methods of its disposal.

Indore treated 15 lakh metric tonnes of waste in just 3 years, through biomining and bioremediation techniques. Bioremediation involves introducing microbes into a landfill to naturally 'break' it down and biomining involves using trommel machines to sift through the waste to separate the 'soil' and the waste component. The city managed to chip away 15 lakh metric tonnes of waste at a cost of around Rs 10 crore. A similar experiment was successfully carried out in Ahmedabad also.

4(a) State tow methods of effective plastic waste collection in your school.

4(b) Name any two uses of "single-use plastic" in daily life.

4(c) If we discontinue the use of plastic, how can an environment-friendly substitute be provided?

4(d) Do you think microbes will work similarly in landfill sites as they work in the laboratory? Justify your answer.

5. Fertilization is the process of
   (a) Transfer of male gamete to female gamete
   (b) Fusion of nuclei of male and female gamete.
   (c) Adhesion of male and female reproductive organs
   (d) The formation of gametes by a reproductive organ

6. In the excretory system of human beings, some substances in the initial filtrate such as glucose, amino acids, salts and water are selectively reabsorbed in

   (a) Urethra (b) Nephron (c) Ureter (d) Urinary bladder

(OR)

Pseudopodia are

(a) Small hair-like structures present on unicellular organisms
(b) False feet developed in some unicellular organisms
(c) Long, tube-like structures coming out of the mouth
(d) Suckers which are attached to the walls of the intestines

7. Which one of the following statements is correct about the human circulatory system?
   (a) Blood transports only oxygen and not carbon dioxide
   (b) Human heart has five chambers
   (c) Valves ensure that the blood does not flow backwards
   (d) Both oxygen-rich and oxygen-deficient blood gets mixed in the heart.
8. Which one of the following statements is not true about nuclear energy generation in a nuclear reactor?
   (A) Energy is obtained by a process called nuclear fission.
   (B) The nucleus of Uranium is bombarded with high energy neutrons.
   (C) A chain reaction is set in the process.
   (D) In this process a tremendous amount of energy is released at a controlled rate.

   (OR)

   The biggest source of energy on Earth's surface is
   a) Biomass
   b) Solar radiations
   c) Tides
   d) Winds
9. If a person has five resistors each of value 1/5 Ω, then the maximum resistance he can obtain by connecting them is
   (a) 1 Ω b) 5 Ω c) 10 Ω d) 25 Ω

   (OR)

   The resistance of a resistor is reduced to half of its initial value. In doing so, if other parameters of the circuit remain unchanged, the heating effects in the resistor will become
   a) Two times
   b) Half
   c) One-fourth
   d) Four times
10. Fleming's Right-hand rule gives
   a) Magnitude of the induced current
   b) Magnitude of the magnetic field
   c) Direction of the induced current
   d) Both, direction and magnitude of the induced current.
11. How much of the net primary productivity of a terrestrial ecosystem is eaten and digested by herbivores?
   a) 100 % b) 10 % c) 1 % d) 0.1 %
12. Choose the incorrect statement from the following :

a) Ozone is a molecule formed by three atoms of oxygen

b) Ozone shields the surface of the Earth from ultraviolet radiations

c) Ozone is deadly poisonous

d) Ozone gets decomposed by UV radiations.

For question numbers 13 and 14, two statements are given – one labelled as Assertion (A) and the other labelled as Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below : (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

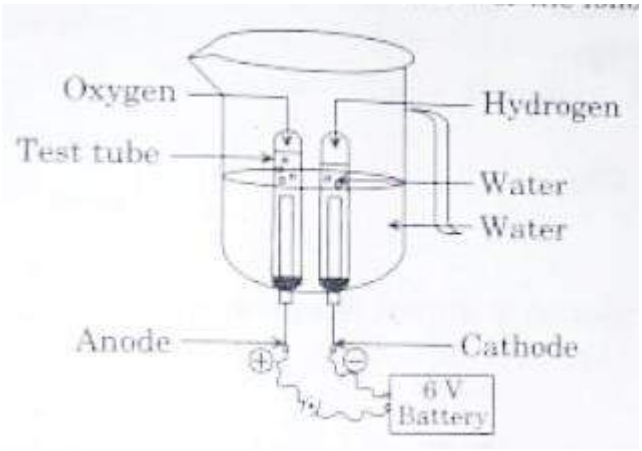
13. Assertions: (A): The reaction is $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$ an example of a redox reactions.
    Reason (R): In this reaction, HCL is reduces to Cl_2 where as MnO_2 is oxidized to $MnCl_2$.
14. Assertion (A): Wring of an insect and wing of a bird are analogous organs.
    Reason (R): The organs which are quite different in fundamental structure and origin but perform same function in different species are called analogous organs.

SECTION - B **[10 × 3 = 30 MARKS]**

15. When hydrogen sulphide gas is passed through a blue solution of copper sulphate, the colour of the solution fades and a black precipitin is obtained.
    (a) Name the type of reaction mentioned above.
    (b) Why does the colour of the solution for away?
    (c) Write the chemical name of the black precipitate formed.
    (d) Give the balanced chemical equation for the reaction involved.

(OR)

Study the figure given below and answer the following questions.



(a) Name the process depicted in the diagram

(b) Write the composition of the anode and the cathode.

(c) Write the balanced chemical equation of the reaction taking place in this case.

(d) The reaction does not take place if a few drops of dilute sulphuric acid are not added to water. Why?

16. A concave mirror is used for image formation for different positions of an object. What inferences can be drawn about the following when an object is placed at a distance of 10 cm from the pole of a concave mirror of focal length 15 cm ? (a) Position of the image (b) Size of the image (c) Nature of the image Draw a labelled ray diagram to justify your inferences.
17. Define the term evolution. "Evolution cannot be equated with progress". Justify this statement.

(OR)

"During the course of evolution, organ or features may be adapted for new functions. " Explain this fact by choosing an appropriate example.

18. Write in tabular form the location and function of the hormones secreted by each of the following glands present in the human body:
19. List three differentiating features between the process of galvanization and alloying.

(OR)

Compare in tabular form the reactivity's of the following metals with cold and hot water.

a) Sodium b) Calcium c) Magnesium

20. Carbon a member of group 14, forms a large number of carbon compounds estimated to be about three million. Why is this property not exhibited by other elements of this group? Explain.
21. Define geotropism. Draw a labelled diagram of a plant showing geotropic movements of its parts
22. (a) For the same angle of incidence of 45^o, the refraction angle in two transparent media P and Q is 20^o and 30^o respectively. Which of the two is optically denser and why?

    (b) Define 1 dioptre power of a lens

    (c) Find the focal length denser and why?
23. How will you use two identical glass prisms so that a narrow beam of white light incident on one prism emerges out of the second prism as white light ? Draw and label the ray diagram.
24. A person may suffer from both myopia and hypermetropia defects. (a) What is this condition called ? (b) When does it happen ? (c) Name the type of lens often required by the persons suffering from this defect. Draw labelled diagram of such lenses.

SECTION - C **[6 × 5 = 30 MARKS]**

25. Define an alloy. How is an alloy prepared? List two advantage of making alloys. Write the composition of stainless steel. Why is steel preferred over iron? List two reasons.

26. Draw a neat diagram showing fertilisation in a flower and label (a) Pollen tube, (b) Male germ cell and (c) Female germ cell, on it. Explain the process of fertilisation in a flower. What happens to the (i) ovary and (ii) ovule after fertilisation ?

(OR)

(a) What is puberty ?

(b) Describe in brief the functions of the following parts in the human male reproductive system :

(i) Testes (ii) Seminal vesicle (iii) Vas deferens (iv) Urethra

(c) Why are testes located outside the abdominal cavity ?

(d) State how sperms move towards the female germ cell.

27. Draw a schematic diagram of a circuit consisting of a battery of 3 cells of 2 V each, a combination of three resistors of 10 Ω, 20 Ω and 30 Ω 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

(OR)

Two identical resistors, each of resistance 15 Ω, are connected in (i) series, and (ii) parallel, in turn to a battery of 6 V. Calculate the ratio of the power consumed in the combination of resistors in each case

28. A cloth strip dipped in onion juice is used for testing a liquid "x". the liquid "x" change its colour. Which type of an indicator is onion juice.

The juice "x" turns blue litmus red. List observations the liquid "x" will show on reacting with the following.

a) Zinc granules

b) Solid sodium carbonate

Write the chemical equations for the reactions involved.

(OR)

Define water of crystallisation. Give the chemical formula for two compounds as examples. How can it be proved that the water of crystallisation makes a difference in the state and colour of the compounds?

29. Why is nutrition necessary for the human body ?

(b) What causes movement of food inside the alimentary canal ?

(c) Why is small intestine in herbivores longer than in carnivores ?

(d) What will happen if mucus is not secreted by the gastric glands ?

30. (a) State with reasons the mode of connecting all electrical appliances in common domestic electric circuits.

(b) Which two separate circuits are often used in domestic electric circuits and why?

(c) When does an electric short circuit occur? How can it be prevented?

CBSE Class 10 Science Question Paper 2020
Set 2 Solution

SCIENCE SET - 2

SECTION - A

1. Which oil should be chaser for cooking to remain healthy?

   Vegetable oils containing unsaturated fatly acids are good for health.

2. Induced current:

   Current produced in a conductor due to change in magnetic flux through the coil is called induced electric current.

   Phenomena: Electromagnetic induction

3. Answer question numbers 3(a) – 3(d) on the basis of your understanding of the following paragraph and the related concepts.

   Around the year 1800, only 30 elements were known Dobereiner in 1817 and Newlands in 1866 tried to arrange the then known elements and framed laws which were rejected by the scientists. Even after the rejection of the proposed laws, many scientists continued to search for a pattern that correlated the properties of elements with their masses.

   The main credit for classifying elements goes to Mendeleev for classifying elements goes to Mendeleev for his most important contribution to the early development of a periodic table of elements where in he arranged the elements on the basis of their fundamental property, the atomic mass and also on the similarity of chemical properties. The format of their hydrides and oxides were treated as basic criteria for the classification of the elements. However, Mendeleev's classification also had some limitations as it could not assign the position to isotopes. He also left some gaps in the periodic table.

   3(a). State Mendeleev's periodic law.

Solution:

Mendeleev's periodic law states that, "The properties of element are the periodic function of their atomic masses."

(b) Why did Mendeleev leave some gaps in the periodic table?

Solution:

Mendeleev left some gaps in the periodic table, because he predicted the existence of few more element that had not been discovered at that time.

(c) If the letter 'R' was used to represent and of the elements in the group, then the hydride and oxide of carbon would respectively be represented as

(i) RH_4, RO (ii) RH_4, RO_2 (iii) RH_2, RO_2 (iv) RH_2, RO

Solution:

(ii) RH_4, RO_2

(d) Isotopes are

(i) Atoms of element with similar chemical properties but different atomic masses.

(ii) Atoms of different elements with similar chemical properties but different atomic masses.

(iii) Atoms of elements with different chemical properties but same atomic masses.

(iv) Atoms of different elements with different chemical properties but same atomic masses.

Solution:

(i) Atoms of element with similar chemical properties but different atomic masses.

4. a) Separate dustbins can be set up at school to collect the plastic and the same can be recycled.

   Certain plastic wastes like bottles can be reused as useful products like pen holder in the school.

   b) Plastic water bottles, grocery plastic bags

   c) We can replace the use of plastic bags with cloth or jute bags .Unlike plastic bags ,jute and cloth bag are reusable and environment friendly .

5. Fertilization is the process of

   (B) Fusion of nuclei of male and female gamete

6. (B) Nephron

   (OR)

   (B) False feet developed in some unicellular organism

7. (C) Valves ensure that the blood does not flow backwards.

8. **(B) (OR)(B)**

9. **(A)**

   Maximum resistance is obtained when all resistors are connected in series.

   $R_{max} = R_1 + R_2 + R_3 + R_4 + R_5$

   $R_1 = R_2 = R_3 = R_4 = R_5 = R$ given

   $R_{max} = 5R \qquad \therefore R = \frac{1}{5}$

   $= 5 \times \frac{1}{5}$

   (a) $R_{max} = 1\ \Omega$

   (OR)

   (B)

By Joule's law of heating.

$H = I^2 Rt$

$H \alpha R$

$\therefore$ When $R \rightarrow R/2$

$H \rightarrow H/2$ As H is also reduced by half.

10. A
11. P 10%
12. (D) Ozone gets decomposed by UV radiations.
13. Assertions: (A): The reaction is an example of a redox reactions.

    Reason (R): In this reaction, HCL is reduces to Cl_2 where as MnO_2 is oxidized to $MnCl_2$.

    Solutions: "C" (A) is true, but (R) is false.
14. Biology

SECTION - B

15. When hydrogen sulphide gas is passed these a blue solution of copper sulphate, the column of the solution fades and a black precipitin is obtained.

    (a) Name the type of reaction mentioned above.

    It is a double displacement and a precipitate reaction.

    (b) Why does the colour of the solution for away?

    Due to the formation of black coloured CuS and a colourless sulphuric acid.

    (c) Write the chemical name of the black precipitate formed.

    CuS – Copper Sulphide.

    (d) Give the balanced chemical equation for the reaction involved.

    (OR)

    Study the figure given below and answer the following questions.

    (a) Name the process depicted in the diagram. Electrolysis of water [To show]

    (b) Write the composition of the anode and the cathode.

    Anode – Oxygen

    Cathode - Hydrogen

    The volume of hydrogen that is gathered at the cathode is twice the volume of oxygen that is gathered at anode.

(c) Write the balanced chemical equation of the reaction taking place in this case.

(d) The reaction dos not take place if a few drops of dilute sulphuric acid are not added to water? Why?

Water being a covalent compound, it can't ionnize to release ions. To increase the conductivity of water, few drops of sulphuric acid is added. Being a strong acid, it can ionize completely to release H^+ ions. These, H^+ ions are responsible for the conduction of electricity.

16. u = - 10 cm

f = - 15 cm

a) $\frac{1}{f} = \frac{1}{v} + \frac{1}{u}$

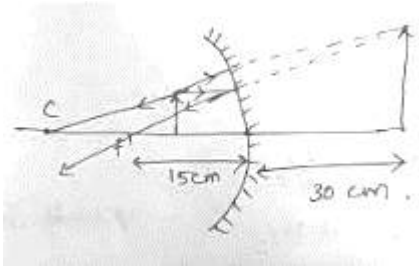
$$\frac{1}{-15} = \frac{1}{v} + \frac{1}{(-10)}$$

$$\frac{1}{v} = \frac{-1}{15} + \frac{1}{10}$$

$$v = 30cm$$

(b) $m = \frac{h_i}{h_o} = \frac{-v}{u} = \frac{-30}{-10} = 3$ $\qquad (Enl\arg ed)$

(c) Virtual d erect.



17. The change in the characteristics of a species over a long period of time and occurs after several generations is called evolution.

Progress is made by organism in a species in order to adapt to its environment. Progress doesn't result in the formation of complete new species where as evolution does. Let us consider human being as an example. We *Homo sapien* with the invent of technology have progressed in our life style but this hasn't caused an evolution of a new species. Therefore evolution cannot be equated to progress.

(OR)

Organisms that have similar structures but adapt for new functions exhibit divergent evolution. These structures are known as homologous organs. Let us consider forelimbs of horse and man. The structure of the forelimbs of horse and man are similar but horse uses forelimbs to walk whereas man does not use the fore limbs to walk. Therefore the function is different but the similar structure is a proof that they share common ancestor.

18.

	Location	**Function**
(a) Pituitary gland	Brain (Below hypothalamus)	Control all the other endocrine gland. Secrete growth horomones
(b) Thyroid gland	Neck	Secretes thyroxin, maintains metabolism
(c) Pancreas	Abdomen	Secretes insulin and glucagon; maintains the blood glucose level

19. List three differentiating features between the process of galvanization and alloying.

Galvanisation	**Alloying**
(i) It is a method of protecting steel and iron from rusting by coating them with a thin layer of zinc.	It is a very good method of improving the properties of metal. We can the desired properties by this method. Ex: Iron is mixed with 'Ni' & 'Cr',we get stainless steel which is hard a does not rust.
(ii) It doesn't modify the property of the metal	It modify the property of the metal.
(iii) If the coating of zinc is removed then rusting takes place.	Alloy will not rust.

OR

Compare in tabular form the reactivity's of the following metals with cold and hot water.

a) Sodium b) Calcium c) Magnesium

Sodium	**Calcium**	**Magnesium**

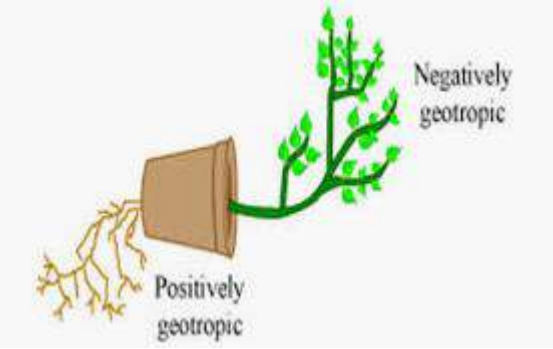
$(i)\ 2Na_{(s)}+2H_2O_{(l)}\longrightarrow 2NaOH_{(aq)}+H_{2(g)}+\text{heat energy}$	$Ca_{(s)}+2H_2O_{(l)}\longrightarrow Ca(OH)_{2(aq)}+H_{2(g)}$	$Mg_{(s)}+2H_2O_{(l)}\longrightarrow Mg(OH)_{2(aq)}+H_{2(g)}$
The reaction of 'Na' with cold water is very violent. It is highly exothermic. It also reacts with hot water in the same way.	The reaction of calcium with cold water is less violent. Calcium starts floating because the bubbles of hydrogen gas formed stick to the surface of the metal. It also reacts with hot water as well.	Magnesium is not react cold water. It reacts with hot water to form magnesium hydride. It also starts floating as the bubbles of H_2 gas stick to its surface.

20. Carbon a member of group 14, forms a large number of carbon compounds estimated to be about three million. Why is this property not exhibited by other elements of this group?

Solution:

The reason is the formation of strong bonds by carbon due to its small size. This enables the nucleus to hold on to the shared pairs of electrons strongly. The bonds formed by elements having larger atoms of this group are much weaker and also the carbon has the unique ability to form bonds with other atoms and carbon giving rise to larger molecules. This property is catenation.

21. The movement of plant growth towards or against the gravity is called geotropism. If the movement is towards gravity, its termed as positive geotropism and away from gravity is known as negative geotropism.



22. (a) Medium 1 is optically denser as angle of refraction is less. So the light say bends more towards normal.

(b) (i) It is the reciprocal of focal length $p=\frac{1}{f(m)}$ (ii) One dioptre is the power of a lens of focal length one metre.

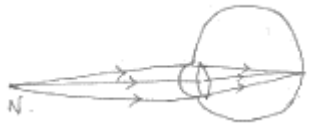
(c) $f = \frac{1}{p} = \frac{1}{0.5} = 2m$

23. (i) When white light is passed through a prism, it splits into its seven constituent color (VIBGYOR)
(ii) Splitting of white light into its constituent color is called dispersion.

24. **(a)** Presbyopia:

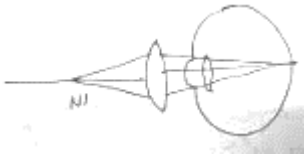
→ With increase in age, the capalrility of eye to focus on near by object reduces due to decrease in power of accommodation.

→ A person suffering from this defect can neither see near by object (nor) distant object clearly.
(b) It happens when ciliary mucles become weak
(c) Bi of cal lens
(a) Near point of presbyopia



(2) presbyopia eye

(3) correction



SECTION - C

25.

Solution: (i) Alloy: An alloy is a homogeneous mixture of two (or) more metals (or) a metal and a non-metal.

(ii) It is prepared by first melting the primary metal and then dissolving the other elements in it in definite proportional. it is then cooled to room temperature.

(iii) a) Alloys are more resistant to Corsica, b) Alloys are stronger than the metal from which they are made.

(iv) When iron mixed with nickel and chromium we get stainless steel. (Nickel upto 35% and chromium – 18 to 20 %)

(v) a) As it is strong and doesn't rust like iron b) It is very hard as pure iron is very soft

26. Fertilization in flower :

As the pollen grains land on the stigma, the pollen tube formation occurs.

The male gametes travel through the pollen tube and enters into the ovule through the micropylar end.

The female gamete and male gamete fuses to form the zygote and this process is called fertilization.

After fertilization (i) Ovary becomes the fruit

(ii) Ovule becomes the seed.

(OR)

(a) Puberty is the period during which an adolescent reaches sexual maturity and becomes capable of reproduction.

(b) (i) Testes → For production of sperms

(ii) Seminal vesicle → Its secretion contributes to 60% of the seminal plasma. Provides the fluid medium for the sperms to swim.

(iii) Vas deferens → Carries the sperm from testes to penis.

(iv) Urethra → A common pathway for both urine and sperms.

(c) Testes is located in scrotum outside the abdominal cavity as it provides temperature required for the synthesis of sperm.

(d) Sperms are motile as they have a tail for locomotion. The mitochondria in the mid piece of the sperm provides the energy for the tail to locomote

27.

(a) $I_1 = \frac{\upsilon}{R_1} = \frac{6}{10} = 0.6A$

$I_2 = \frac{\upsilon}{R_2} = \frac{6}{20} = 0.3A$

$I_3 = \frac{\upsilon}{R_3} = \frac{6}{30} = 0.2A$

(b) $I = I_1 + I_2 + I_3 = 0.6 + 0.3 + 0.2$

$I = 1.1A$

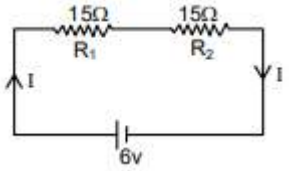
(c) Effective resistance

$\upsilon = IR$

$R = \frac{\upsilon}{I} = \frac{6}{1.1} = 5.45\Omega$

(OR)

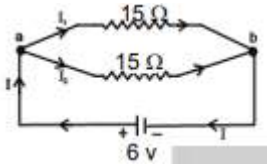
In series,



$$R_s = R_1 + R_2 = 30\Omega$$

$$P_s = \frac{\upsilon^2}{R_3} = \frac{6\times 6}{30} = 1.2W$$

In parallel



$$\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2}$$

$$\frac{1}{R_p} = \frac{1}{15} + \frac{1}{15} = \frac{2}{15}$$

$$R_p = \frac{15}{2}\Omega$$

$$R_p = 7.5\Omega$$

$$P_p = \frac{\upsilon^2}{R_p} = \frac{36}{7.5} = 4.8$$

$$\frac{P_s}{P_p} = \frac{1.2W}{4.8} = \frac{1}{4}$$

(d)

28. A cloth strip dipped in onion juice is used for testing a liquid "x". the liquid "x" change its colour. Which type of an indicator is onion juice.

The juice "x" turns blue litmus red. List observations the liquid "x" will show on reacting with the following.

a) Zinc granules

b) Solid sodium carbonate

Write the chemical equations for the reactions involved.

Solution: (ii) Too many appliances should not be connected to a single socket.

Onion juice is an olfactory indicator.

a) $Zn + 2HCl \longrightarrow ZnCl_2 + H_2$. When a burnt match stick is brought close to the mouth of the test tube, the gas burns with a pop sound.

b) $Na_2CO_3 + 2HCl \longrightarrow 2NaCl + H_2O + CO_2$

CO_2 released turns lime water milky.

(OR)

Define water of crystallisation. Give the chemical formula for two compounds as examples. How can it be proved that the water of crystallisation makes a difference in the state and colour of the compounds?

Solution:

Water of crystallisation is the fixed number of water molecules present in one formula unit of a salt.

Eg: $\underset{\text{(Blue vitriol)}}{CuSO_4 .5H_2O}$ $7H_2O$ (Green vitriol)

By heating these crystals they lose their water molecules and hence result in change in state and colour takes place.

29. a.The process of taking in nutrients is called nutrition .Nutrients are required for building the various parts of the body ,thus enabling growth and repair of the body .The nutrients also provide us with energy.

b. Peristalsis causes the movement of food inside the alimentary canal .

c.The major nutrient in herbivores is cellulose.It takes a longer time to digest cellulose .Thus herbivore have a longer intestine than carnivores.

d.Due to the concentrated HCL there would be perforations in the stomach walls if there is no mucus secreted.

30. (a) Domestic appliances are connected in parallel due to
    - Home appliances are rated for same voltage (230V)
    - If a break Occurs in any one of branch circuits, it will have no effect on other branch.

(b) Types of circuit (i) Series (ii) Parallel / With reference to rating (i) High power rating (ii) Low power rating

(Single power source supplies electric power to all appliances)

(c) When live wire and neutral wire come in contact, the resistance of the circuit becomes almost zero and extremely large current flows. This is called short circuiting.

Prevention / Precaution:-

(i) Wire should be well insulated

(ii) Too many appliances should not be connected to a single socket.