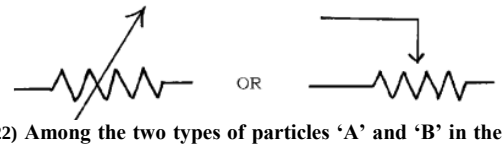
# SCIENCE

## REVISION and MODEL QUESTIONS

**21) Draw the symbol of 'variable resistance' or 'Rheostat' used in the electric circuit.**

*Ans. :*




**22) Among the two types of particles 'A' and 'B' in the atmosphere, particles 'A' scatter mainly the blue light and particles 'B' scatter mainly the red light. Which type of the particles have larger size ?**

**Ans. :** Particles of type B

**23) How do you detect a base using blue litmus paper?**

**Ans:** The colour of litmus paper does not change when dipped in a basic solution**.**

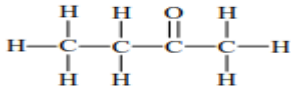
**24). What are the applications of the thermite reaction?**

**Ans:** ♦ To join railway tracks .

♦ To join broken machine parts

25) **Write the structural formula of an unsaturated carbon compound containing four carbon atoms and a ketone functional group.**

**Ans:**



**26) What is the importance of xylem tissue in plants?**

**Ans**: It carries water from the roots to other parts

27) **Observe the table below showing different forms of pea plants**

| Seed colour | Flower position |
|---|---|
| Green (G) | Middle of stem (A) |
| Yellow (g) | Top of stem (a) |

**Write the indicator of the trait having green seeds and flowers at the top of the stem.**

**Ans:** GGaa or Ggaa

28) **How is the binary fission in amoeba differs from budding in hydra?**

**Ans:** ♦ In Amoeba, the mother cell divides to form two daughter cells.

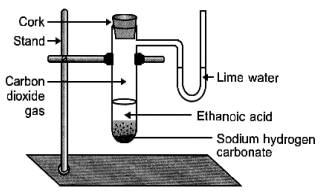
♦ After the bud grows by repeated cell division, it separates from the mother body and grows into an independent organism.

**29) When ethanoic acids reacts with sodium hydrogen carbonate a salt X is formed along with a gas Y. Name X and Y. Describe an activity and draw the diagram of the apparatus used to prove that the gas Y is one which you have named. Also write the chemical equation for the reactions involved.**

**Ans:** 'X' is sodium ethanoate. 'Y' is $CO_2$ gas.

**Aim**: To demonstrate the reaction of carboxylic acid with sodium hydrogen carbonate and sodium hydrogen carbo

**Materials Required**: Ethanoic acid, sodium hydrogen carbonate, sodium hydrogen carbonate




Evolution of carbon dioxide gas by reaction of ethanoic acid with sodium hydrogen carbonate

**Proredure:**

1. Set the apparatus as shown in diagram**.**

2.Take 1 g of $NaHCO_3$ and add 2 ml of ethanoic acid into it.

3. Pass the gas formed through lime water and note down the observations.

4. Repeat the same procedure with sodium hydrogen carbonate and record your observations.

**Observation**: Brisk effervescence due to carbon dioxide formed which turns lime water milky.

**Chemical Reaction:**

$$CH_3COOH\ (l) + NaHCO_3 \rightarrow CHCOONa + H_2O + CO_2$$

$$\underset{\text{Lime water}}{Ca(OH)_2\ (aq)} + \underset{\text{Carbon dioxide}}{CO_2\ (g)} \rightarrow \underset{\text{(White ppt.)}}{CaCO_3\ (s)} + \underset{\text{Water}}{H_2O}$$

**Conclusion:** Carboxylic acid reacts with sodium hydrogen carbonate to liberate $CO_2$ gas which turns lime water milky

**30) Why are carbon and its compounds used as fuel for most applications?**

**Ans:** (i) It is because they are inflammable and have high calorific value.

(ii) They are easily combustible.

(iii) They are easily storable and transportable**.**

**31) The molecular formula of the fourth member of a homologous series is $C_5H_{10}$. Then, determine and write the molecular formulae of first two members of the same series.**

**Ans:-**

Molecular formulae :

i) $C_2H_4$

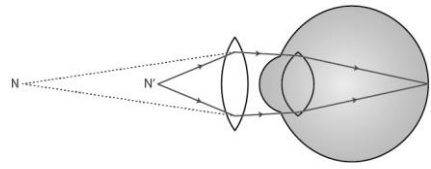
ii) $C_3H_6$.

**32) What are redox reactions ?**

**Ans. :** A chemical reaction in which one reactant gets oxidised while the other gets reduced is called redox reaction

**33) Make a diagram to show how hypermetropia is corrected. The near point of a hypermetropic eye is 1 m. What is the power of the lens required to correct this defect? Assume that the near point of the normal eye is 25 cm.**

**Ans**- An individual suffering from hypermetropia can see distinct objects clearly but he or she will face difficulty in clearly seeing objects nearby. This happens because the eye lens focuses the incoming divergent rays beyond the retina. This is corrected by using a convex lens. A convex lens of a suitable power converges the incoming light in such a way that the image is formed on the retina, as shown in the following figure.




Correction for hypermetropic eye

The convex lens creates a virtual image of a nearby object (N' in the above figure) at the near point of vision (N) of the individual suffering from hypermetropia.

The given individual will be able to clearly see the object kept at 25 cm (near point of the normal eye), if the image of the object is formed at his near point, which is given as 1 m.

Object distance, $u = -25$ cm

Image distance, $v = -1$ m $= -100$ m

Focal length, $f$

***(Contd.....)***