

BCM SCHOOL BASANT AVENUE DUGRI ROAD, LUDHIANA

SCIENCE ASSIGNMENT (2023 – 2024)

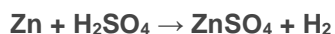
CLASS – X (BIO/CHEMISTRY)

ANSWER KEY

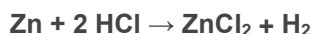
- a) During electrolytic refining, impure metal is used as anode and pure metal is used as cathode. So, impure silver will be used as an anode, and pure silver will be used as a cathode.

(b) Silver sulphate or Silver nitrate solution can be an appropriate electrolyte.

(c) We will obtain pure silver on the cathode because metals are electropositive.
- X is carbon. Diamond and graphite are allotropes of carbon. Diamond is the hardest natural substance, and hence Y is diamond. Graphite is a good conductor of electricity, and hence Z is graphite.
- (a) If the same amount of zinc dust is taken in the test tube in the place of zinc granules, the reaction rate will increase, and the reaction will occur more quickly. This is because the surface area per unit volume of powder is more than that of the zinc granules, and hence the powder will provide more surface area for the reaction to occur.

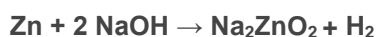


- (b) If we use dilute hydrochloric acid instead of dilute sulphuric acid, the reaction will occur as usual because we are mixing a strong acid with metal.



- (c) With copper turnings, hydrogen gas will not evolve because copper is less reactive, so it does not react with dil. H_2SO_4 or dil. HCl . Hence, no reaction will take place.

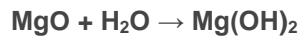
- (d) If sodium hydroxide is taken in place of dilute sulphuric acid and the tube is heated, the metal will react with the base to form the corresponding salt and evolve hydrogen gas.



4. Here, X is magnesium oxide, and Y is magnesium nitride.

- (a) The chemical formulae of X are MgO and Y is Mg_3N_2 .

(b) When X is dissolved in water following reaction occurs.



5. Plasmodium and Leishmania reproduce by the process of fission which is an asexual mode of reproduction. Plasmodium reproduces by multiple fission. About 1000 daughter cells are produced by the multiple fission of a Plasmodium. Leishmania reproduces by the process of binary fission. In Leishmania, the splitting of parent cell takes place in a definite plane (longitudinally) with respect to flagellum at its end to produce two daughter cells.
6. Difference between asexual and sexual mode of reproduction is as follows :
- Asexual reproduction:
Gametes are not formed hence fertilisation does not take place.
- Sexual reproduction:
Gametes are always formed and fertilisation takes place to form a zygote.

Species reproducing sexually has a better chance of survival as variations occur only during the sexual reproduction. Variations increase the chances of survival of an individual by making them more fit. Selection of variations by environmental factors forms the basis of evolution.

7. (i) (c) It exhibits photosynthesis
(ii) (c) (i) and (iv)
(iii) (d) All of the above
(iv) (c) Both (A) and (b)