

## Sample Paper

### Science class X

#### General instructions

1. Answer all questions.
2. All questions are compulsory.
3. Marks against each question is indicated against it.

M.marks-75

Time allotted - 3hrs.

#### Section A

1. The pH value of three acidic solutions, having equal molar concentration are Vinegar-3.2, Coco-Cola -5.90, Beer- 4.8 . Arrange these in order of increasing Acid strength.
2. Mention any two harmful effects of nuclear radiations on human body.
3. Name the acid used for the preservation of sausages and pickles while storing them
5. Though a hot iron emits radiation, yet it is not visible in the dark. Why?
6. Why do shopkeepers apply oil on tools made of Iron while storing them?
7.
  - (a) Why are artificial satellites called eyes in the sky ?
  - (b) What are the features of terrestrial planets?
8.
  - (a) A housewife found that the cake prepared by her is hard and small in size. What ingredient has she forgotten to add that would make the cake fluffy
  - (b) How are coloured glasses made?
9. A nuclear reactor using  $^{235}\text{U}$  is used to operate at power level of 200 MW. If the energy released per fission of  $^{235}\text{U}$  is 200 MeV, calculate the rate of consumption of  $^{235}\text{U}$  per day.
10. Explain how the metals are obtained from their compounds using the Reduction process :-
  - (1) Metal X which is low in the reactivity series
  - (2) Metal Y which is in the middle of the series
  - (3) Metal X which is high up in the reactivity series
11.
  - (a) Sugarcane juice mixed with yeast was kept in a covered container. After a few days it developed a strong smell. Name the process taking place. What could the strong smell due to ?
  - (b) What method would you suggest for separating the smelling substance from the final mixture.
  - (c) State two uses of the separated substance.

12. What are Van Allen radiation belts? Give ways to increase the magnitude of induced current.

13.

(a) Give the various symbols used in electric circuits.

(b) What is the resistance offered by (1) 100W bulb 2) 2 watt bulb 3) 30 watt bulb, Given line voltage = 220 V.

(Or)

(a) Why resistance becomes less in parallel combination?

(b) If a student by mistake connects voltmeter in series with or an ammeter in parallel of a circuit, what will happen?

(c) A bird sitting on an 11,000 V wire is quite safe but a man touching a 220 V wire may die. Why is it so ?

14. How are irreversible reactions made reversible? Explain with the help of an activity the effect of concentration on the rate of reaction.

15. Define resistance of a conductor? What is its cause? Explain the factors upon which resistance of a conductor depends.

16. What are equatorial and polar orbits? Draw a neat labeled diagram to show the equatorial and polar orbital of a satellite

(Or)

"Life cannot originate and survive on planet mars". Why ? Why are comets of great interest to scientists.

17. Define corrosion. Name two metals alloyed with gold to make it hard? Why do Gold ornaments look new even after several years of use.

18. Describe with the help of a neat labeled diagram the destructive distillation Of wood. Why is the use of charcoal as a fuel discouraged even though it has a High calorific value.?

19. What is glass? Why is it called a super cooled liquid.? Explain with the help Of a neat labeled diagram the manufacture of glass in a tank furnace.

(Or)

Explain the manufacture of steel by Bessemer's process with the help of a Neat labelled diagram. Which type of steel produces exceptional magnetism And is used for making permanent magnets.

20. What are the essential parts of the eye and their function? How does the eye Work? Near point of a hypermetropic eye is at 1m. Find the focal length, Power and nature of lens used to rectify the defect.

### Section B

21. Give the name to the type of chromosome where the centrometre is situated at

The tip of the chromosome.

22. What is the synthetic theory of evolution?

23. Name the scientists who provided that gene is a part of a chromosome.

24. What is potable water? What are its characteristics?

25.

(a) Draw a neat labeled diagram showing reflex arc.

(b) Why is hypothalamus considered as master gland? What is the function of Vasopressin

26. (a) "Ontogeny repeats phylogeny". Explain the meaning of the statement.

(b) Archaeopteryx is a connecting link between birds and animals. Explain

27. Grafting is a common method of obtaining a superior plant from two different Plants. Explain? What type of fruits will be obtained if a branch of a dasheeri Mango is grafted as desimango. Why is vagina called birth canal?

(Or)

Why is large no. of sperms released in a single ejaculate? Distinguish between sexual and asexual reproduction

28. In India there are some special wildlife projects to protect the wildlife. Justify.

(Or)

What are the ill effects of pollution on flora or fauna?

(Or)

(a) Which of the following are non biodegradable :-

Butter, egg shell, pineapple, wool, synthetic fibre , Tomato leaves, leather, Egg plant.

(b) Sample of blood of a person, on routine microscopic examination unraveled a high no. of stippled red blood cells. Name the pollutant responsible for this condition.

29. Name and explain any 3 factors affecting photosynthesis. Although food and Oxygen are necessary for life, man can live without food for a no. of days, But he dies without oxygen within a few minutes. Why?

(Or)

Explain the principle of dialysis. What is:

(a) Osmo-regulation (b) Flame cell