

**Sample Question Paper 2020 – 9
Science - Class – X****Time allowed: 03 Hours****Maximum Marks: 80****General Instructions:**

- I. The Question paper comprises of three Sections A, B and C. You have to attempt all the sections.
- II. All Questions are compulsory but some questions have internal choice.
- III. Question number 1 to 20 in Section - A are one - mark questions. Question number 1 to 10 are multiple choice questions. Each has four choices (a), (b), (c) and (d) out of which only one is correct. Question number 11 to 20 are very short answers (VSA) and Assertion-Reasoning. These are to be answered in brief.
- IV. Question number 21 to 30 in Section - B are three marks questions. These are to be answered in about 50 words each.

SECTION - A

1. Like animals, plants produce
 - (a) many more male gamete than eggs.
 - (b) a few more male gamete than eggs.
 - (c) equal numbers of male gamete and eggs.
 - (d) fewer male gamete than eggs.
2. Large intestine in man mainly carries out:
 - (a) Absorption
 - (b) Assimilation
 - (c) Digestion of fats
 - (d) Digestion of carbohydrates
3. On the basis of following features identify correct option.
 - (i) These elements majorly forms acidic oxides.
 - (ii) These elements are majorly non-metals.
 - (a) *s*-block elements
 - (b) *p*-block elements
 - (c) *d*-block elements
 - (d) *f*-block elements
4. Hydrogen has three isotopes ^1H , ^2H and ^3H respectively. On what basis these elements were placed in modern periodic table ?
 - (a) Atomic mass
 - (b) Atomic number
 - (c) Both (a) and (b)
 - (d) None of these
5. Which of the following is not the use of concave mirror?
 - (a) Shaving mirror
 - (b) Flood light
 - (c) Dentist mirror
 - (d) Street lighting

6. If the image size is larger than the object, then the mirror is:
(a) Plane mirror (b) Concave mirror
(c) Convex mirror (d) Both (a) and (b)
7. Soil erosion can be prevented by:
(a) Deforestation (b) Afforestation (c) Overgrazing (d) Removal of vegetation
8. A successful forest conservation strategy should involve
(a) protection of animals at the highest trophic level.
(b) protection of only consumers.
(c) protection of only herbivores.
(d) comprehensive programme to protect all the physical and biological components.
9. In the solution of CuSO_4 , a piece of Zn is dropped. The solution becomes colourless. This reaction will be:
(a) Substitution reaction (b) Decomposition reaction
(c) Addition reaction (d) Dissociation reaction
10. A dilute ferrous sulphate solution was gradually added to the beaker containing acidified permanganate solution. The light purple colour of the solution fades and finally disappears. Which of the following is the correct explanation for the observation?
(a) KMnO_4 is an oxidising agent, it oxidises FeSO_4 .
(b) FeSO_4 acts as an oxidising agent and oxidises KMnO_4 .
(c) The colour disappears due to dilution ; no reaction is involved.
(d) KMnO_4 is an unstable compound and decomposes in presence of FeSO_4 to a colourless compound.
11. Name two metals which are found in free state in nature?
12. What chemical process is used for obtaining a metal from its oxide?
13. Write the chemical equation for reaction between plaster of paris and water.

OR

Name the substance which upon treating with chlorine gas gives bleaching powder. Write the chemical equation for the reaction.

14. What are differences between autotrophic and heterotrophic nutrition? (Any two)

OR

What criteria do we use to decide whether something is alive?

15. What are the differences between aerobic and anaerobic respiration? Name some organisms that use the anaerobic mode of respiration.
16. Define principal focus of a concave mirror.

OR

Define 1 dioptre of power of a lens.

17. Find the power of a concave lens of focal length 2m.

Directions Qs. 18 - 20: Each of the following questions contains an assertion followed by reason. Read them carefully & answer the question on the basis of following options you have to select the one that best describes the two statements.

- (a) If both Assertion and Reason are correct & Reason is the correct explanation of Assertion.
(b) If both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion.
(c) If Assertion is correct but Reason is incorrect.
(d) If Assertion is incorrect but Reason is correct.

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18. **Assertion:** As the temperature of a medium increases, the refractive index decreases.

Reason: When a ray travels from vacuum to a medium, then μ is known as absolute refractive index of the medium. ($\mu_{\text{vacuum}} = 1$).

19. **Assertion:** Acetic acid is a weak acid.
Reason: Acetic acid gets partially ionised in aqueous solution.
20. **Assertion:** Chloroplast helps in photo-synthesis.
Reason: Mitochondria have enzymes for dark reaction.

SECTION - B

21. What happens to the current and voltage when resistors are connected in parallel?
22. Why is fuel oil considered a better fuel than coal in industries? Give any three reasons.

OR

Explain allotropy in carbon?

23. A compound 'X' of sodium is commonly used in kitchen for making crispy pakoras. It is also used for curing acidity in the stomach. Identify 'X'. What is its chemical formula? State the reaction that takes place when it is heated during cooking.
24. Locate the following groups in the periodic table:
(a) Alkali metals
(b) Halogens
(c) Alkaline Earth metals
25. Why is an artificial kidney required?
26. Name different theories of evolution.
27. (a) What is the relation between focal length and radius of curvature?
(b) What are the possible positions of an object in front of a concave mirror to get an enlarged image?
(c) Which mirror has a wider field of view?

OR

- (a) What do you understand by optically denser and optically rarer medium?
(b) What is the relation between ${}_1n_2$ and ${}_2n_1$?
(c) For the same angle of incidence, the angle of refraction in three different media A, B and C are 150° , 25° and 35° respectively. In which medium will the velocity of light be minimum?
28. How is chlorine of lime chemically different from calcium chloride? Why does chloride of lime gradually lose its chlorine when kept exposed to air?
29. An organism has genotype AaBb. What are the types of gametes formed?

OR

What is speciation? List four factors responsible for speciation.

30. (a) A student is unable to see clearly the words written on the blackboard placed at a distance of approximately 3 m from him. Name the defect of vision the boy is suffering from. State the possible causes of this defect and explain the method of correcting it.
(b) Why do stars twinkle? Explain.

SECTION - C

31. (a) Explain Maxwell's right hand thumb rule?
(b) Explain the importance of earthing in a domestic circuit.
32. The molecules of the alkene family are represented by a general formula C_nH_{2n} . Now answer the following:
(a) What do ' n ' and ' $2n$ ' signify?
(b) What is the molecular formula of an alkene when $n = 6$?
(c) What is the molecular formula of the alkene if there are six H atoms in it?
(d) What is the molecular formula and structural formula of the first member of the alkene family?
(e) Write the molecular formulae of lower and higher homologues of an alkene which contains four carbon atoms.

OR

Give two differences between soap and synthetic detergents? Give the name of the by product of soap industry? How is it formed?

33. Prepare a chart of different hormones with their function and location in the body.
34. (a) Explain working of human eye.
(b) A person suffering from long sightedness cannot see objects before 1.5 m distinctly. Suggest a lens with proper focal length and power for his remedy. Assume the near point of the normal eye to be 25 cm.
35. (a) Which metals does not stick to glass ?
(b) Which metal is commonly used in thermit welding ?
(c) What is the nature of zinc oxide ?
(d) Will the CO (carbon monoxide) change the colour of blue litmus solution ?
(e) What is the nature of phosphorus oxide ?
36. "Damage to the ozone layer is a cause of concern." Justify the statement. Suggest any two steps to limit this damage.

OR

- (a) We do not clean ponds or lakes but an aquarium needs to be cleaned. Why?
(b) Why is improper disposal of wastes a curse to environment?