PRACTICE PAPER-4

CLASS X

Science (086)

Term 2 (2021-22)

Max. Marks:40 **Time allowed: 2 hours**

General Instructions:

i) All questions are compulsory.

ii) The question paper has **three sections and 15 questions. All questions are compulsory.**

iii) Section–A has 7 questions of 2 marks each; Section–B has 6 questions of 3 marks each; and Section–C has 2 case based questions of 4 marks each.

iv) Internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.

SECTION-A

1. Distinguish between pollination and fertilisation. Mention the site and product of fertilisation in a flower.
2. Distinguish between a gamete and zygote. Explain their roles in sexual reproduction.
3. A very small population of a species faces a greater threat of extinction than a larger population. Provide a suitable genetic explanation.
4. Write the common food chain of a pond ecosystem.
5. Why and when does a current carrying conductor kept in a magnetic field experience force? List the factors on which direction of this force depends?
6. a) A compound X has the molecular formula C_3H_6O with structural formula CH_3CH_2CHO. Give its IUPAC name. Can another compound have the same molecular formula? Give the structure and IUPAC name of that compound also.
   b) Write the structures of
   (i) Ethanoic acid
   (ii) Hex anal

7. a) Name the following compounds.

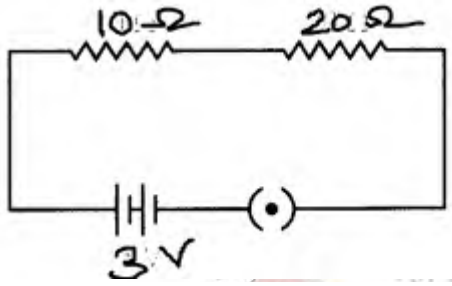
(i) $H-\overset{H}{\underset{|}{C}}=O$

(ii) CH_3-CH_2-Cl

b) What are the properties of carbon which lead to huge number of carbon compounds we see around us?

SECTION-B

8. Define F_1 and F_2 generation.
9. Explain some harmful effects of agricultural practices on the environment.
10. Study the following electric circuit and find (i) the current flowing in the circuit and (ii) the potential difference across 10 Ω resistor.



11. (a) Describe an activity to demonstrate the pattern of magnetic field lines around a straight conductor carrying current.

(b) State the rule to find the direction of magnetic field associated with a current carrying conductor.

(c) What is the shape of a current carrying conductor whose magnetic field pattern resembles that of a bar-magnet ?

12. Two elements X and Y belong to group 1 and 2 respectively in the same period of periodic table. Compare them with respect to:
periodic table from the left to the right and why?

a) the number of valence electrons in their atoms
b) their valencies
c) metallic character
d) the sizes of their atom
e) formulae of their oxides
f) formulae of their chlorides

13. An element ‘M’ has atomic number 11.
    (a) Write its electronic configuration.
    (b) State the group to which ‘M’ belongs.
    (c) Is ‘M’ a metal or a non-metal?
    (d) Write the formula of its chloride.

SECTION-C

14. A cross was carried out between a pure bred tall pea plant and a pure bred dwarf pea plant and F1 progeny was obtained. Later the F1 progeny was served to obtained F2 Progeny. Answer the followings questions: (a) What is the phenotype of the F_1 progeny and why? (b) Give the phenotypic ratio of the F_2 progeny. (c) Why is the F_2 progeny different from the F_1 progeny?
15. What is meant by electrical resistivity of a material? Derive its S.I. unit. Describe an experiment to study the factor on which the resistance of a conducting wire depends.