PRACTICE PAPER-1

CLASS X

Science (086)

Term 2 (2021-22)

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

General Instructions:

i) All questions are compulsory.

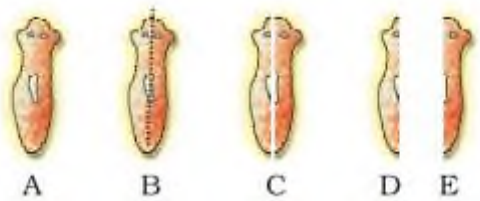
ii) The question paper has **three sections** and **15 questions**. All questions are compulsory.

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. In a bisexual flower in spite of the young stamens being removed artificially, the flower produces fruit. Provide a suitable explanation for the above situation.
2. Would a Planaria cut vertically into two halves regenerate into two individuals? Complete Figure D and E by indicating the regenerated regions.



3. In human beings, the statistical probability of getting either a male or female child is 50: 50. Give a suitable explanation.
4. Suggest one word for each of the following statements/ definitions
   (a) The physical and biological world where we live in
   (b) Each level of food chain where transfer of energy takes place
5. (a) The element carbon forms a very large number of compounds. Give reason for this fact.

   (b) State two characteristic features of carbon which when put together give rise to large number of carbon compounds.

6. (a) Write the first two members of aldehydes.

   (b) Draw electron dot structure for: F_2, CO_2, ethene, butyne.

7. State three factors on which magnetic field produced by a current – carrying solenoid depends.

SECTION-B

8. A blue colour flower plant denoted by BB is cross bred with that of white colour flower plant denoted by bb.
   (a) State the colour of flower you would expect in their F_1 generation plants.
   (b) What must be the percentage of white flower plants in F_2 generation if flowers of F_1 plants are self-pollinated?
   (c) State the expected ratio of the genotypes BB and Bb in the F_2 progeny.
9. What are decomposers? What will be the consequence of their absence in an ecosystem?
10. (a) What are 'groups' and 'periods' in the 'periodic table'?
    (b) Two elements M and N belong to group I and II respectively and are in the same period of the periodic table. How do the following properties of M and N vary?
    I. Sizes of their atoms
    II. Their metallic characters
    III. Their valencies in forming oxides
    IV. Molecular formulae of their chlorides
11. (a) F, Cl and Br are the elements each having seven valence electrons.

    Which of these (a) has the largest atomic radius, (b) is most reactive? Justify your answer stating reason for each.

    (b) The atomic numbers of three elements are given below:

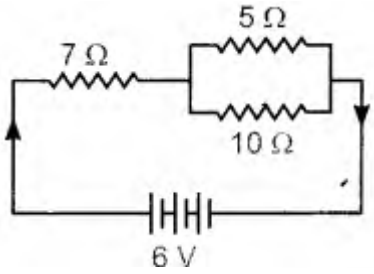
Element (symbol)	A	B	C
Atomic number	3	6	9

    Write the symbol of the element which belongs to (a) group 1, (b) group 14, of the periodic table. State the period of the periodic table to which these elements belong. State reason to support your answer.
12. Define electromagnetic induction? Two circular coils A and B are placed close to each other. If the current in the coil A is changed, will some current be induced in the coil B? Explain.
13. What is the principle of electric motor?
    State the function of,
    (i) split ring
    (ii) field magnet used in the electric motor.

SECTION-C

14. (a) Two resistors R_1 and R_2 may form (i) a series combination or (ii) a parallel combination, and the combination may be connected to a battery of 6 volts. In which combination, will the potential difference across R_1 and across R_2 be the same and in which combination, will the current through R_1 and through R_2 be the same?

(b) For the circuit shown in this diagram, calculate



(i) the resultant resistance.

(ii) the total current.

(iii) the voltage across 7 Ω resistor.

15. In one of his experiments with pea plants Mendel observed that when a pure tall pea plant is crossed with a pure dwarf pea plant, in the first generation, 1 F only tall plants appear.

(a) What happens to the traits of the dwarf plants in this case?

(b) When the 1st F generation plants were self-fertilised, he observed that in the plants of second generation, 2nd F both tall plants and dwarf plants were present. Why it happened? Explain briefly.