

CBSE SAMPLE QUESTION PAPER
CLASS-X
SCIENCE [TERM-II]

Time : 2 Hrs.

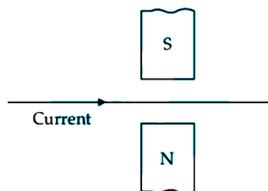
Maximum Marks : 40

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

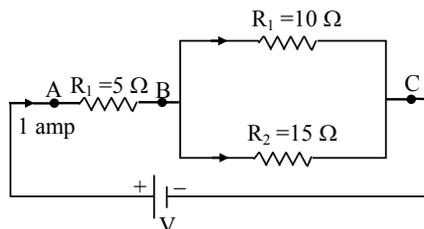
1. Can the following groups of elements be classified as Dobereiner's triad? [2]
(a) Na, Si, Cl
(b) Be, Mg, Ca
Atomic mass of Be = 9; Na = 23; Mg = 24; Si = 28; Cl = 35.5; Ca = 40
Explain by giving reason.
 2. Generate a homologous series containing the functional group '-COOH' up to four carbon atoms. [2]
 3. Which group of elements could be placed in Mendeleev's periodic table without disturbing the original order? Give reason. [2]
- OR**
- (i) Which of the following formulae represents a saturated hydrocarbon?
 C_nH_{2n+2} ; C_nH_{2n+1} ; C_nH_{2n} ; C_nH_{2n-2}
 - (ii) Select saturated hydrocarbons from the following:
 C_3H_6 ; C_5H_{10} ; C_4H_{10} ; C_6H_{14} ; C_2H_4
4. Which way does the wire carrying current in the given figure tend to move? [2]



5. Draw a schematic diagram of a typical electric circuit comprising a cell, an electric bulb, an ammeter and a plug key. [2]
 6. If Y bearing sperm fuses with the egg what will be the sex of the child? Also state the chromosomal constitution. [2]
 7. Why is lake considered to be a natural ecosystem? [2]
- OR**
- What limits the number of trophic levels in a food chain?

Section B

8. Three resistances are connected as shown in diagram. Through the resistance 5 ohms, a current of 1 ampere is flowing: [3]



- (i) What is the total resistance?
(ii) What is the voltage of the battery?
9. Explain heating effect of current in brief and deduce the formula used. [3]
10. An element X of group 15 exists as diatomic molecule and combines with hydrogen at 773 K in presence of a catalyst to form a compound, ammonia which has a characteristic pungent smell. [3]
(i) Identify the element X. How many valence electrons does it have?
(ii) Draw the electron dot structure of the diatomic molecule of X. What type of bond is formed in it?
(iii) Draw the electron dot structure for ammonia and what type of bond is formed in it?
11. The elements of the second period of the Periodic Table are given below: Li, Be, B, C, N, O, F [3]
(i) Give reason to explain why atomic radii decrease from Li to F.
(ii) Identify the most (a) metallic and (b) non-metallic element.

OR

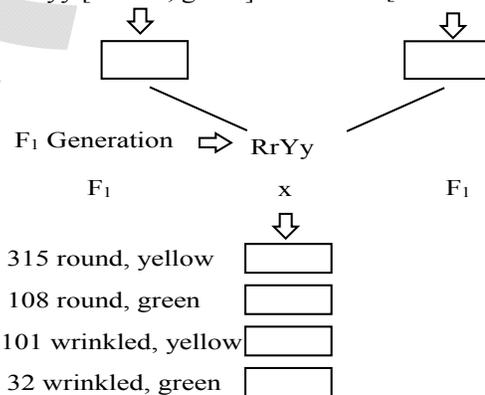
How many structural isomers can you draw for pentane?

12. The existence of decomposers is essential in a biosphere. Give reason to justify the statement. [3]
13. A blue flower plant denoted by BB is crossed with that of white coloured flower plant denoted by bb. [3]
(i) State the colour of flower you would expect in their F_1 generation plants.
(ii) What must be the percentage of white flower plants in F_2 generation if flower of F_1 plants are self-pollinated?
(iii) State the expected ratio of the genotypes BB and bb in the F_2 progeny?

OR

Given below is the experiment carried out by Mendel to study inheritance of two traits in garden pea.

RRyy [Round, green] × rrYY [Wrinkled, yellow]

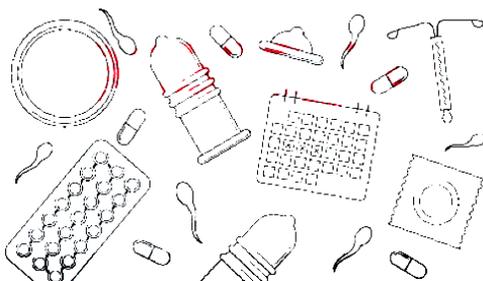


- (i) Fill the boxes.
(ii) Why did Mendel carry experiment with two traits?

Section C

This section has 02 case-based questions (14 and 15). Each case is followed by 03 sub-questions (a, b and c). Parts a and b are compulsory. However, an internal choice has been provided in part c.

14. The sexual act always has the potential to lead to pregnancy. Pregnancy will make major demands on the body and the mind of the woman, and if she is not ready for it, her health will be adversely affected. Therefore, many ways have been devised to avoid pregnancy. [4]

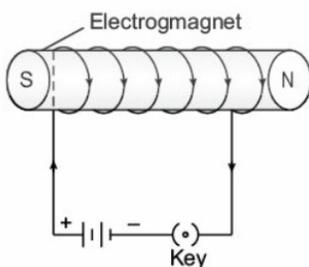


- (a) Name any two bacterial diseases that are caused due to unprotected sex.
 (b) How a pill helps in preventing pregnancy?
 (c) Explain the surgical method in preventing pregnancy.

OR

How is the surgical removal of unwanted pregnancies misused? How does it affect the healthy society?

15. When an iron bar is placed inside a solenoid carrying current, it becomes a magnet as long as current flows through the solenoid. Such a magnet is known as electromagnet. In fact, the magnetic field inside the solenoid magnetizes the soft iron bar placed in it, which acts as an electromagnet. [4]



- (a) What type of core is used to make an electromagnet?
 (b) State one use of electromagnet.
 (c) State two ways by which the strength of an electromagnet can be increased.

OR

Define right hand thumb rule.