

CLASS 10<sup>TH</sup> CBSE SCIENCE  
MOCK TEST-2  
TERM 2

T.T-2 Hours

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

**SECTION-A**

1. (a) Write the name of any three elements present in third period.  
(b) Write electronic configuration of all of these.
2. Some of the elements and their atomic numbers are given in the table.

| Element | Atomic number |
|---------|---------------|
| P       | 3             |
| Q       | 17            |
| R       | 13            |

- (a) How many valence electrons are there in the elements R?
- (b) Write the chemical formula of the compound formed by combining the elements P and Q.
3. (a) What is callus?  
(b) What do you call to the pear shaped muscular organ which lies in the pelvic cavity of a woman? State the function of this organ.
4. (a) Name the type of reproduction found in planaria and show it with the help of Diagram.  
(b) State two advantages of this type of reproduction.
5. Mendel studied seven pairs of contrasting characters in a garden pea plant.  
(a) Mention the number of trait related to flower, pod and seed respectively.  
(b) What is the number of traits which are based on the colour?

OR

Mendel cross pollinated plants having yellow round seeded plant with green wrinkled seeded plants. All the plants produced are plants having yellow and round seed. When heterozygous yellow and round seeded plant is self pollinated, what will be the frequency of RrYY genotype among the offspring? Explain with the help of cross.

6. Explain any three ways to induce current in a coil.

OR

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? Give reason

7. (a) What are detritivores? Give examples.  
(b) What role they play in an ecosystem?

OR

Draw and explain an upright ecological pyramid showing pyramid of biomass

### SECTION-B

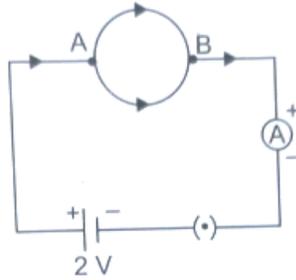
8. (a) Elements A, B, C and D have atomic numbers 1, 8, 11 and 19 respectively. Choose the odd element and give reasons for your answer.  
(b) Size of sodium atom is bigger than that of hydrogen atom. Why?  
(c) Name the element which has twice as many electrons in its second shell as in its first shell. Write its electronic configuration also.

9. (a) Write the name and molecular formula of an alkyne having four carbon atoms.  
(b) Write the name and formula of the third member of homologous series Having general formula  $C_n H_{2n}$   
(c) Write the name and structure of an alcohol with three carbon atoms in its molecule

OR

- (a) Give the names of the following functional groups:  
(i) - OH (ii) - COOH  
(b) Name an element, other than carbon, which exhibits the property of catenation upto seven or eight atoms. Are these compounds stable?  
(c) Write the next homologue of each of the following:  
(i)  $C_2H_4$  (ii)  $C_4H_6$
10. How do Mendel's experiments show that?  
(a) Traits may be dominant or recessive  
(b) Traits are inherited independently
11. (a) Calculate the total power consumed by five fans, if each one of them draws a current of 0.8 A at a potential difference of 220 V.  
(b) What is resistance of 12 m wire having radius  $2 \times 10^{-4}$  m and resistivity  $3.14 \times 10^{-8} \Omega m$ ?

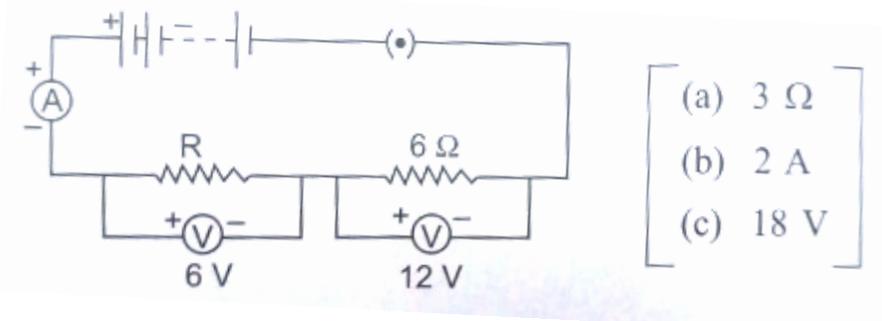
12. A wire of resistance  $8\ \Omega$  is bent in the form of a closed circle as shown in the figure. What is the effective resistance between the points A and B at the end of a diameter of the circle? What is the ammeter reading?



OR

A circuit is shown in the diagram given alongside. Find

- The value of  $R$
- The reading of the ammeter.
- The potential difference across the terminals of battery



13. Study the chain below.  
Flowers  $\rightarrow$  Honey bee  $\rightarrow$  Human being
- Human beings do not feed on bees. How are the bees a part of the chain?
  - Is there any difference between normal food chain (Grass  $\rightarrow$  Goat  $\rightarrow$  Man) and the above food chain? Give reason.
  - Do you think that the above chain can really be regarded as food chain? Explain.

### SECTION -C

14. Subhra, having a cell with two genes HH for black hair marries Manav having cell with genes hh for blonde hair. Their daughter Soha has black hair.
- Which of the parents has dominant gene?
  - Work out the cross and show the genotype for F1 generation.
  - If F1 is cross bred with another person having pure black hairs, what will be the phenotypic ratio of F2 generation?

OR

If F1 is cross bred with another person having pure black hairs, what will be the genotypic ratio of F2 generation?

15. **Read the following passage and answer the following questions.**

The strong and uniform magnetic field inside the solenoid can be used to magnetize a piece of magnetic material like soft iron. The iron core increases the strength of magnetic field further. For example, when an iron nail is inserted into the core of the solenoid, it becomes strongly magnetized and can attract pieces of iron, as long as current is flowing through the solenoid. The magnet thus formed is called an electromagnet. Note that, the electromagnet in this case may become hot. Magnetic fields of naturally occurring permanent magnets are not so strong. Stronger magnetic fields can be produced by using electromagnets. As soon as the current is turned off, the magnetism inside the electromagnet vanishes quickly. If a steel core is placed inside current carrying solenoid in place of soft iron, however, the steel then retains the magnetism after switching off the current and becomes a strong permanent magnet.

(a) What do you mean by solenoid?

(b) State two ways by which the strength of magnetic field by current carrying solenoid be increased

(c) What is the shape of magnetic field lines due to a straight current carrying conductor?

OR

Describe an activity to explain how a moving magnet can be used to generate electric current in a coil.