CBSE EXAMINATION PAPER-2022

SCIENCE

(Solved)

Time allowed : 3 hours | Maximum Marks : 27

General Instructions :

Read the following instructions carefully and follow them :

i. This question paper contains **16 questions.** All questions are **compulsory.**

ii. This question paper is divided into **3 sections.**

iii. **Section A** – questions number **1 to 4** are case based questions

iv. **Section B** – questions number **5 to 13** are very short answer

v. **Section C** – questions number **14 to 16** are short answer

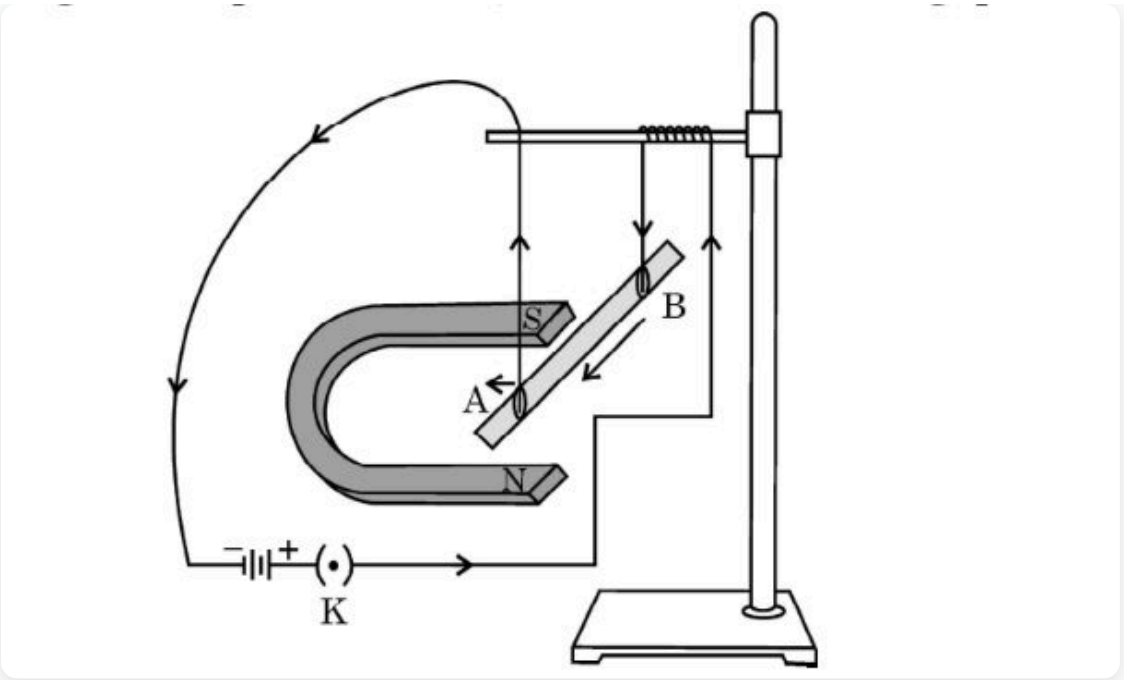
vi. There is no overall choice given in the question paper. However, an internal choice has been provided in few questions.

vii. Use of calculator is NOT allowed.

Section A

Question 1.

A student was asked to perform an experiment to study the force on a current carrying conductor in a magnetic field. He took a small aluminum rod AB, a strong horse shoe magnet, some connecting wires, a battery and a switch and connected them as shown. He observed that on passing current, the rod gets displaced. On reversing the direction of current, the direction of displacement also gets reversed. On the basis of your understanding of this phenomenon, answer the following questions:



Question 2.

Draw the patter of magnetic field lines produced around a current carrying straight conductor held vertically on a horizontal cardboard. Indicate the direction of the field lines as well as the direction of current flowing through the conductor.

Question 3.

Draw the pattern of magnetic field lines produced around a current carrying straight conductor held vertically on a horizontal cardboard. Indicate the direction of the field lines as well as the direction of current flowing through the conductor.

Question 4.

Draw the pattern of magnetic field lines produced around a current carrying straight conductor held vertically on a horizontal cardboard. Indicate the direction of the field lines as well as the direction of current flowing through the conductor.

Section B

Question 5.

"Carbons prefers to share its valence electrons with other atoms of carbon or with atoms of other elements rather than gaining or losing the valence electrons in order to attain noble gas configuration." Give reasons to justify this statement.

[2 Marks]

Question 6.

The atomic number of an element 'X' is 11.

(i) Write the electronic configurations of X and find its valency.

(ii) Write the formula and nature of its oxide.

[2 Marks]

Question 7.

Give reasons :

(i) Placenta is Extremely essential for foetal development.

(ii) Uterine lining becomes thick and spongy after fertilisation.

[2 Marks]

Question 8.

(a) Name the reproductive and non-reproductive parts of bread mould (Rhizopus).

(b) List any two advantages of vegetative propagation.

[2 Marks]

Question 9.

Name the reproductive parts of an angiosperm. Where are these parts located ? Explain the structure of its male reproductive part.

[2 Marks]

Question 10.

What is puberty ? Mention any two changes that are common to both boys and girls in early teenage years.

[2 Marks]

Question 11.

When is the force experienced by a current - carrying straight conductor placed in a uniform magnetic field.

(i) Maximum;

(ii) Minimum ?

[2 Marks]

Question 12.

In the following food chain only 2J of energy was available to the peacocks. How much energy would have been present in Grass ? Justify your answer.

GRASS → GRASS HOPPER → FROG → SNAKE → PEACOCK

[2 Marks]

Question 13.

(a) What is meant by garbage ? List two classes into garbage is classified.

(b) What do we actually mean when we say that the "enzymes are specific in their action"?

[2 Marks]

Section C

Question 14.

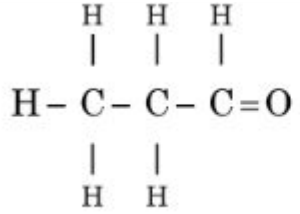
Consider the following organic compounds:

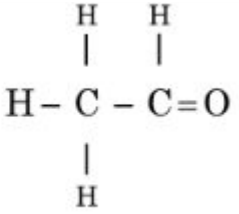
(a) Name the functional group present in their compounds.

(b) Write the general formula for the compounds of this functional group.

(c) State the relationship between these compounds and draw the structure of any other compound having similar functional group.

[3 Marks]

(i)


(ii)


Question 15.

(a) State Ohm's Law. Represent it mathematically.

(b) Define 1 Ohm.

(c) What is the resistance of a conductor through which a current of 0.5 A flows when a potential difference of 2 V is applied across its ends?

[3 Marks]

Question 16.

(a) What is the meaning of electric power of an electric device ? Write its SI unit.

(b) An electric kettle of 2kW is used for 2h. Calculate the energy consumed in

(i) kilowatt hour and

(ii) joules.

[3 Marks]