

# CLASS X GUESS PAPER SCIENCE

TIME ALLOWED: 3 HOURS

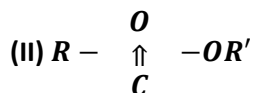
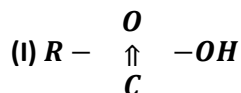
MAXIMUM MARKS: 60

## GENERAL INSTRUCTIONS:

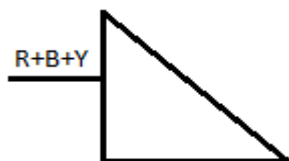
1. All questions are compulsory.
2. This question paper consist of two sections A and B. Questions 1-6 in Section A and 17-19 in Section B contains One mark each, questions 7-10 in Section A and 20-24 in Section B carry Two marks each, questions 11-14 in Section A and 25-26 in Section B carry Three marks each and questions 15-16 in Section A and 27 in Section B carry Five marks each.
3. There is no overall choice. However, an internal choice has been provided in two questions of 5 marks in Section A and one question of 5 marks in Section B. A student has to attempt only one of the alternatives in such questions.
4. Wherever necessary, the diagrams drawn should be neat and properly labeled.
5. Use of calculators is not permitted.

## SECTION A

1. On adding dilute hydrochloric acid to copper oxide powder, the solution formed is blue-green. Predict the new compound formed which imparts a blue-green colour to the solution.
2. The magnification produced by a plane mirror is +1. What does this mean?
3. Name the functional groups in the following compounds:



4. How can the damage due to overloading of a circuit be prevented?
5. Why should curd and sour substances not be kept in brass and copper vessels?
6. A beam of light consisting of red (R), blue (B) and yellow (Y) colours is incident on prism, as shown in figure. Complete the diagram to show the refracted and emergent rays.



7. An organic compound A has the molecular formula  $C_2H_4O_2$  and is acid in nature. On heating with ethyl alcohol and conc. sulphuric acid, vapours with pleasant and fruity smell are given out.  
  
What is the organic compound A and what is the chemical equation involved in the reaction?
8. What is meant by the term electromagnetic induction? What is the function of a galvanometer?
9. What is meant by water of crystallization in a substance? How would you show that blue copper sulphate crystals contain water of crystallization?
10. Draw the pattern of magnetic field lines of a current carrying solenoid. What does the pattern of field lines inside the solenoid indicate?
11. Explain the following chemical changes, giving one example in each case.
  - (I) Double displacement
  - (II) Redox reaction
  - (III) Decomposition reaction
12. (a) What is myopia or near-sightedness?  
  
(b) What is its cause?  
  
(c) Draw a ray diagram to show how a myopic eye can be corrected using suitable lens.
13. Assign reasons for the following:
  - (a) Platinum, gold and silver are used to make jewellery.
  - (b) To make hot water tanks, copper is used and not steel (an alloy of iron).
  - (c) Lemon is used for restoring the shine of tarnished copper decorations.

14. By drawing ray diagram, find the position, size and nature of the image formed when an object of 5 cm in length is held 25 cm away from a converging lens of focal length 10 cm.
15. (I) A hot plate of an electric oven connected to a 220 v line has two resistance coils A and B, each of  $24\ \Omega$  resistance, which may be used separately, in series, or in parallel. What are the currents in three cases?

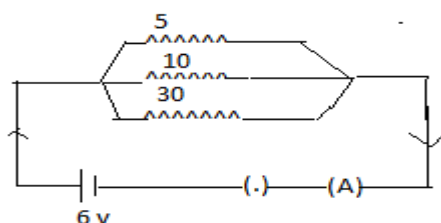
(II) (a) State Ohm's law.

(b) How does the resistance of a wire vary with its area of cross-section?

(c) Why are alloys used in electrical heating devices rather than pure metals?

OR

(I) For the circuit shown in the diagram given below:



Calculate:

(a) the value of current through each resistor.

(b) the total current in the circuit.

(II)(a) Why does the cord of an electric heater not glow while the heating element does?

(b) Why is tungsten used almost exclusively for filament of electric lamps?

(c) Why are copper and aluminium wire usually used for electricity transmission?

16. (a) Compare and contrast the arrangement of elements in Mendeleev's periodic table and the modern periodic table.

(b) Name:

(i) three elements that have a single electron in their outermost shells.

(II) two elements that have two electrons in their outermost shells.

OR

The following table shows the position of four elements in the periodic table:

Groups/ Periods	1	2	3 to 12	13	14	15	16	17	18
1	A								
2		B							C
3						D			

Using the above table answer the following questions:

- Which are/is non-metals?
- Which two elements are most likely to form ionic bond?
- Name the chemically inactive element.
- Out of B and C, which one has a bigger atomic radius and why?
- Why element C is called noble gas?

#### SECTION B

- State two characteristics of a good source of energy?
- From the list given below, pick out the items which can be recycled:  
Used clothes, polythene bags, glass bottles, news paper
- What kind of mirror is used in solar cooker? Why?
- Only variations that confer an advantage to an individual organism will survive in a population. Comment on the statement.
- Study carefully the food chains given below:

Food chain I: grass-grass hopper-frog

**Food chain II: wheat-rat-snake-hawk**

**To which of the two consumers, snake or hawk will more energy (percent) be available and why?**

- 22. How does adrenaline hormone help in addition to electric impulses travelling via nerve cells to meet out emotional stress (like fear)?**
- 23. (a) Classify the two fuels –CNG and hydrogen as renewable and non-renewable.**  
**(b) Justify the statement, “Hydrogen is a better and cleaner fuel than CNG.”**
- 24. State one important function of ozone layer in the atmosphere. How is it formed there? Which compounds are responsible for the depletion of ozone layer? How do these compounds enter into atmosphere?**
- 25. What is regeneration of an organism? Describe with neat diagram regeneration in planaria.**
- 26. (a) How is surgical method applicable for contraception?**  
**(b) Draw a neat-well labeled diagram of the longitudinal section of a flower.**
- 27. (a) Draw a sectional view of the human heart and label on it:**

**Aorta, right ventricle, left ventricle and pulmonary veins**

**(b) State the function of the following compounds of transport system:**

- (I) Blood                      (II) Lymph**

**OR**

**(a) Draw a neat diagram showing cross-section of a leaf and label on it:**

**Phloem, xylem, vascular bundle, lamina**

**(b) Write two differences between autotrophic nutrition and heterotrophic nutrition.**