

**Sample Paper- 2008**  
**Class- X**  
**Subject - Science**

**Time : 2½ Hours**

**Max. Marks : 60**

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**General Instructions**

1. The question paper comprises of two sections A and B. You are to attempt both the sections.
  2. All questions are compulsory.
  3. There is no overall choice However, internal choice has been provided in all the three questions of five marks category. Only one option in such questions is to be attempted.
  4. All questions of section A and all questions of section B are to be attempted separately.
  5. Questions 1 to 6 in section A and 17 to 19 in section B are short question. These carry one mark each.
  6. Questions 7 to 10 in section A and 20 to 24 in section B are short answer type questions and carry two marks each.
  7. Questions 11 to 14 in section A and 25 to 26 in section B are also short answer type questions and carry three marks each.
  8. Questions 15 and 16 in section A and question 27 in section B are long answer type questions and carry five marks each.
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**SECTION A**

1. If a mirror has a focal length of -25 cm, what will be its radius of curvature and nature? 1
2. Write chemical equations for reactions taking place when Manganese dioxide is heated with aluminium powder. 1
3. During summer season, a milkman usually adds a very small amount of baking soda to fresh milk. Give one reason. 1
4. What is the angle of reflection if a ray falls normally on a plane mirror? 1
5. Can a displacement reaction be a redox reaction? Explain with example. 1
6. An electric geyser has the ratings 2000W, 220V marked on it. What should be the minimum rating, in whole number of a fuse wire, that may be required for safe use with this geyser? 1
7. A solution of a substance 'X' is used for testing CO<sub>2</sub>. Identify 'X'. What will be its reaction with Carbon dioxide? Write balanced chemical equation for the reaction. 2
8. A student has been collecting silver coins and copper coins. One day she observed a black coating on silver coins and a green coating on copper coins.

- Which chemical phenomenon is responsible for these coatings? Write the chemical name of black and green coatings. 2
9. Differentiate between short circuiting and overloading of electrical circuits.  
How does a fuse protect an electrical circuit? 2
10. Draw the pattern of magnetic field lines of a current carrying solenoid. What does the pattern of field lines inside the solenoid indicate? Write one application of magnetic field of current carrying solenoid. 2
11. A coil of insulated copper wire is connected to a galvanometer. What will happen if a bar magnet:  
(a) pushed into the coil  
(b) withdrawn from inside the coil  
(c) held stationary inside the coil. 3
12. Two compounds 'A' and 'B' have the same molecular formula  $C_4H_8O_2$ .  
Compound 'A' is an acid and compound 'B' has a fruity smell. Suggest (i) chemical formulae and (ii) the structural formulae of compounds A and B.  
Name the functional group of compound B. What name would you give to the relationship between the compounds A and B. 3
13. (a) Two lenses have power of (i) + 2D (ii) - 4D. What is the nature and focal length of each lens?  
(b) An object is kept at a distance of 100cm from each of above lenses.  
Calculate the (i) image distance (ii) magnification in each of the two cases. 3
14. Two elements X and Y belong to groups 1 and 2 respectively in the same period. Compare them with respect to  
(a) the number of valence electrons  
(b) valency  
(c) metallic character  
(d) size of the atoms.  
(e) formulae of their oxides and chlorides. 3
15. (a)  $C_2H_6O$  is formula of second member of homologous series of alcohol. Give formula of fourth member.  
(b) The molecular formula of an organic compound is  $C_3H_6O$ . Write the formula and names of aldehydes and ketones which are represented by this formula.  
(c) What are structural isomers? Give all structural isomers of  $C_4H_{10}$ .

**OR**

- (a) Why does carbon form largest number of compounds?
- (b) Why are some of these called saturated and other unsaturated compounds?
- (c) Which of these two is more reactive and Why?
- (d) Write the name and structure of two saturated and two unsaturated compounds. 5

16. In a household electric circuit different appliances are connected in parallel to one another.

Give two reasons.

An electrician puts a fuse of rating 5A in that part of domestic electrical circuit in which an electrical heater of rating 1.5kW, 220V is operating. What is likely to happen in this case and why? What change, if any, needs to be made?

**OR**

You are given following current-time graphs from two different sources:

- (i) Name the type of current in two cases.
- (ii) Identify any one source for each type of these currents.
- (iii) What is the frequency of current in case II in India?
- (iv) Use above graphs to write two difference between the current in two cases. 5

### **SECTION B**

17. What happens at the synapse between two neurons? 1

18. The human hand, cat paw and the horse foot, when studied in detail show the same structure of bones and point towards a common origin.

- (i) What do you conclude from this?
- (ii) What is the term given to such structures? 1

19. Name two gases, other than carbon-di-oxide, that are given out during burning of fossil fuel and contribute towards acid rain formation. 1

20. How did the 'Chipko andolan' ultimately benefit the local population? Give any two benefits. 2

21. Explain the Sex determination in Human. 2

22. Name those parts of the flower which serve the same function as the following do in the animals:-

- (i) testis (ii) ovary (iii) eggs (iv) sperms. 2

23. Study carefully the food chains given below:-

Food chain I : grass - grasshopper - 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? 2

24. What do the following transport?

(i) xylem (ii) phloem (iii) pulmonary vein (iv) Vena Cava. 2

25. The genotype of green stemmed tomato plants is denoted as GG and that of purple stemmed tomato plants as gg. When these two are crossed,

(i) What colour of stem would you expect in their F<sub>1</sub> progeny?

(ii) Give the percentage of purple-stemmed plants if F<sub>1</sub> plants are self pollinated.

(iii) In what ratio would you find the genotypes GG and Gg in the F<sub>2</sub> progeny?3

26. Why are environmentalists insisting upon 'sustainable natural resource management'? Give any three reasons. 3

27. (i) Draw the diagram of heart and label its four chambers

(ii) Construct a table to show the functions of these four chambers. 5

OR

Plants absorb water from the soil. How does this water reach the tree tops?

Explain in detail.