

BHARATIYA VIDYA BHAVAN'S V.M.PUBLIC SCHOOL, VADODARA
SESSION 2017-18
Sample paper-1

Class: X
Subject: Science

Max Marks: 80
Time Allotted: 3 hrs

Section-A

Answer the following questions:

- Q1 Which has a higher resistance 50W lamp or 25W lamp bulb and how many times? (1)
- Q2 Define dispersion of light. (1)
- Q3 A student has been collecting silver coins. One day she observed a black coating on silver coin. Which chemical phenomenon is responsible for this coating? Write the chemical name of the coating. (2)
- Q4 a) Draw a sketch to show the magnetic lines of force to due to a current carrying straight conductor (2)
b) Name and state the rule to determine the direction of magnetic field around a straight current carrying conductor
- Q5. What happens at the synapse between two neurons? (2)
- Q6 a) What is myopia? (3)
b) Draw ray diagram to show i) the image formation by myopic eye
ii) Correction by a suitable lens.
- Q7 a) what is power? (3)
b) In a house hold, 5 tube lights of 40W each are used for 5 hours and electric press of 500W for 4 hours everyday. Calculate the total electrical energy consumed by the tube lights and press in a month of 30 days
- Q8 a) Why do we need to look for alternatives sources of energy other than fossil fuels? (3)
Give two reasons.
b) Suggest a step you would take to reduce energy consumption.
- Q9 : (a) Tooth enamel is one of the hardest substances in our body. How does it undergo damage due to eating chocolates and sweets? What should we do to prevent it?
(b) During summer season, a milk man usually adds a very small amount of baking soda to fresh milk. Give one reason. (3)
- Q10 : (a) Why does carbon form largest number of compounds? (3)
(b) Why are some of these called saturated and other unsaturated compounds?
(c) Which of these two is more reactive?
- Q11 : (a) Atomic number is considered to be more accurate parameter than atomic mass for the classification of elements in periodic table. Why?
(b) How does atomic size of elements vary on moving from left to right in a period and from the top to bottom in a group?

(C) A metal forms an oxide having the formula M_2O_3 . It belongs to third period in the periodic table. Write the atomic number and valency of the metal. (3)

Q12. Explain the Sex determination in Human. (3)

Q13. Study carefully the food chains given below: - (3)

Food chain I: grass \rightarrow grasshopper \rightarrow frog

Food chain II: wheat \rightarrow rat \rightarrow snake \rightarrow hawk

To which of the two consumers, frog or hawk will more energy be available & why?

Q14. 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

(a) What colour of stem would you expect in their F_1 progeny? (3)

(b) Give the percentage of purple-stemmed plants if F_1 plants are self-pollinated.

(c) In what ratio would you find the genotypes GG and Gg in the F_2 progeny?

Q15. (a) Why is cross-pollination considered to be superior than self-pollination? (3)

(b) State the method used for growing rose plants.

Q16 a) Draw a ray diagram to show the image formation by a concave mirror when object is kept between the focal point and centre of curvature of the mirror. Write the position and nature of the image. (5)

b) An object 2cm in length is placed at a distance of 10cm in front of a convex mirror of radius of curvature 30cm. Find the position and nature of the image.

Q17 (a) What do you understand by the term electromagnetic induction? Explain with the help of a diagram. (5)

(b) Name one device which works on the phenomena of electromagnetic induction.

(c) Describe different ways to induce current in a coil of wire.

Q18 : A organic compound A is widely used as a preservative in pickles and has a molecular formula $C_2H_4O_2$. This compound reacts with ethanol to form a sweet smelling compound.

(a) Identify the compound A (5)

(b) Write the chemical equation for its reaction with ethanol to form a compound B

(c) How can we get compound A back from B?

(d) Name the process and write corresponding chemical equation.

(e) Which gas is produced when compound A reacts with washing soda? Write the chemical equation.

Q19 : (a) Draw a well labeled diagram of electrolytic refining of copper. In the electrolytic refining of copper, what would you take as anode, cathode and electrolyte?

(b) Silver article becomes black when exposed to air. Why?

(c) Give reason, why copper is used to make hot water tank but steel is not? (5)

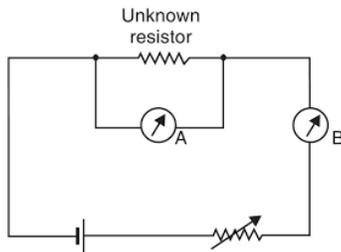
(d) Why alloys are used in electrical heating devices rather than pure metals?

- Q20. (i) Draw the diagram of heart and label its four chambers: - (5)
(ii) Construct a table to show the functions of these four chambers.

- Q21. Plant absorbs the water from the soil. How does this water reach the tree tops?
Explain in detail. (5)

Section B

- Q22(a) Define electrical resistance of a conductor. (2)
(b) In the circuit given below the instrument B reads 0.93 and the instrument A reads 1.80 in their respective S.I units. What is the value of unknown resistor?



- Q23 (a) Define 1Dipotre power of a lens. (2)
(b) A student obtained a sharp image of the grill of the window in the laboratory on a screen using a convex lens. For getting better results her teacher suggested focusing a distant tree instead of the grill. In which direction should the lens be moved for this? purpose to get a sharp image on the screen ?
- Q24: What is meant by sodium stearate soap? Mention the role of NaCl in the preparation of soap? (2)
- Q25: (a) What is the effect of NaOH on blue litmus paper? (2)
(b) pH value of a solution is 4. What does this indicates?
- Q26. What is meant by destarching? Why do plants get de-starched when kept in continuous darkness for about forty-eight hours? (2)
- Q27. State two differences between binary fission and budding. (2)