

BHARATIYA VIDYA BHAVAN'S V.M.PUBLIC SCHOOL, VADODARA  
SESSION 2017-18  
Sample paper-10

Class: X  
Subject: Science

Max Marks: 80  
Time Allotted: 3 hrs

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SECTION-A

- Q1. With respect to air the refractive indices of water and benzene are 1.33 and 1.50 respectively. Calculate the refractive index of benzene with respect to water. (1)
- Q2. What is short circuiting in an electric supply? (1)
- Q3. What do you mean by precipitation reaction? Give an example. (2)
- Q4. What is atmospheric refraction? Use this phenomenon to explain the twinkling of stars. (2)
- Q5. What do the following transport?  
(i) Xylem      (ii) phloem      (iii) pulmonary vein      (iv) Vena Cava. (2)
- Q6. Name the major fuel component of bio-gas. Draw a simple labelled diagram of a fixed dome type bio-gas plant. What is the use of the residual slurry? (3)
- Q7. An electric current geyser rated at 1500W, 250V is connected to a 250 V line mains. Calculate a) the electric current drawn by it b) energy consumed by it in 50h c) cost of energy consumed if each unit costs Rs 6.00. (3)
- Q8. An object 5cm in length is held 25cm away from a converging lens of focal length 10cm. Draw a ray diagram and find the position, size and nature of the image formed. (3)
- Q9. What is formula of bleaching powder? How is it prepared? Write its two uses. (3)
- Q10. a) Find the period and group of the element whose atomic number is 12.  
b) Two elements 'X'(11) and 'Y'(13) are placed in 3<sup>rd</sup> period of the periodic table, calculate the valency of each element ,which among the two has more metallic character?
- Q11. a) What is pH of .01M solution at 298k?  
b) Draw neat labelled diagram to show electrolysis of water. Why volume of the gas at cathode is twice the volume at anode? (3)
- Q12. a) A student sitting in the last row of the classroom is not able to read clearly the writing on the blackboard.  
i) Name the type of defect he is suffering from.  
ii) Name the lens which is used to correct this defect.

b) A person with a myopic eye cannot see objects beyond a distance of 1.5m. What would be the power of the corrective lens used to restore proper vision? (3)

Q13. Draw the structure of a neuron and explain its function. (3)

Q14. What are the four main parts of the fore brain? Give the function of each part. (3)

Q15. What are the different Hormones found in Plants and their functions? (3)

Q16. a) A hot plate of an electric oven connected to a 220V line has two resistance coils A and B, each of 24 ohm resistance, which may be used separately in series or in parallel. What are the currents in these cases?

b) A piece of wire of resistance R is cut into five equal parts. These parts are connected in parallel. If equivalent resistance of this combination is R', then find the ratio R/R'. (5)

Q17. a) State the rule to determine the direction of a i) magnetic field produced around a straight current –carrying conductor. ii) Force experienced by a straight current carrying conductor placed in magnetic field. iii) Current induced in a coil due to its rotation in magnetic field.

b) How will the magnetic force get affected on i) doubling the magnitude of current?  
ii) Reversing the direction of current flow? (5)

Q18. Give reasons

- Sodium and potassium are stored under kerosene.
- Despite being highly reactive Al is used for making cooking utensils.
- Ionic compounds have high melting points.
- The reaction of iron(III) oxide with Al is used to join cracked railway tracks
- Silver articles become black after sometime when exposed to air. (5)

Q19. a) Distinguish saturated and unsaturated hydrocarbons on the basis of combustion process.

- Draw electron dot structure of C<sub>2</sub>H<sub>2</sub>.
- Explain the cleansing action of soap. Why detergents are preferred over soap in hard water?
- Name the alcohol present in alcoholic drinks. (5)

Q20. "Nervous and the hormonal system together perform the function of the control and coordination in the humans". Justify. (5)

Q21. (a) What are the different methods of contraception? (5)

(b) Where are the vegetative buds present in Bryophyllum?

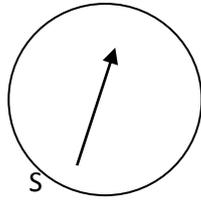
(c) Where does the formation of DNA copy occurs?

## SECTION-B

### Practical Based Questions

Q22. Draw neat and labelled diagram to show the formation of image by a convex lens when an object is placed between i) its focus and optical centre ii) beyond 2F

Q23. A magnetic compass needle is placed in the plane of paper near point A as shown in figure. In which plane should a straight current – carrying conductor be placed, so that it passes through A and there is no change in the deflection of compass? (2)



Q24. How will you show that iron is more reactive than copper, explain with an activity? (2)

Q25. What is the cause of hardness of water? How will you test in the laboratory whether the water is hard or not? (2)

Q26. Why germinating seeds are used for experiment? (2)

Q27. What is photosynthesis? What role is played by light during this process? (2)

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