XII-UJ

Monthly Test - June, 2024

Standard XII
CHEMISTRY

Time: 1.30 hrs   Marks: 35

PART - I

I.   **Choose and write the correct answer:**   10×1=10

1. Wolframite ore is separated from tinstone by the process of
    a) smelting   b) calcination
    c) roasting   d) electromagnetic separation

2. Considering Ellingham diagram, which of the following metals can be used to reduce alumina?
    a) Fe   b) Cu   c) Mg   d) Zn

3. The incorrect statement among the following is ....
    a) Nickel is refined by Mond's process
    b) Titanium is refined by Van Arkel's process
    c) Zinc blende is concentrated by froth flotation
    d) in the metallurgy of Gold, the metal is leached with dilute Sodium chloride solution

4. Which among the following is not a borane?
    a) B_2H_6 b) B_3H_6 c) B_4H_{10} d) None of these

5. Carbon atoms in fullerene with formula C_{60} have
    a) sp^3 hybridised   b) sp hybridised
    c) sp^2 hybridised
    d) partially sp^2 and partially sp^3 hybridised

6. Which of the following is not sp^2 hybridised?
    a) Graphite   b) Graphene   c) Fullerene   d) Dry ice

7. **Assertion**   Monoclinic sulphur is an example of monoclinic crystal system.

   Reason   For a monoclinic system, $a \neq b \neq c$ and $\alpha = \gamma = 90°$, $\beta \neq 90°$.

   a) Both assertion and reason are true and reason is the correct explanation of assertion

   b) Both assertion and reason are true but reason is not the correct explanation of assertion

   c) Assertion is true but reason is false

   d) Both assertion and reason are false

8. $CsCl$ has bcc arrangement, its unit cell edge length is 400 pm its interatomic distance is

   a) 400 pm   b) 800 pm

   c) $\sqrt{3} \times 100$ pm   d) $\left(\dfrac{\sqrt{3}}{2}\right) \times 400$ pm

9. The packing efficiency of a face centered cubic structure is

   a) 74%   b) 68%   c) 52.38%   d) 48%

10. The radius of Na^+ ion is 95 pm and Cl^- ion 181 pm. The coordination number of Na^+ is

    a) 4   b) 6   c) 8   d) 3

PART-II

II. Answer any three questions. Q.No. 15 is compulsory: 3x2=6

11. What is the role of quick lime in the extraction of Iron from its oxide Fe_2O_3?

12. What are the differences between minerals and ores?

13. Give the uses of Borax.

14. How will you convert Boric acid to Boron nitride?

15. What are point defects?

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PART - III

III. **Answer any three questions. Q.No.20 is compulsory**: 3×3=9

16. Explain electrolytic refining of Silver.

17. Which is known as Inorganic benzene? How it is prepared?

18. $AlCl_3$ is more stable where as $TiCl_3$ is highly unstable? Why?

19. A face centered cubic solid of an element (atomic mass 60) has a cube edge of $4 Å$. Calculate its density.

20. Write a note on Frenkel defect.

PART - IV

IV. **Answer all the questions:**   2×5=10

21. a) Explain froth flotation method with diagram.   (5)

(OR)

  b) Describe the structure of diborane.   (5)

24. a) i) Describe the structure of Graphite.   (3)
    ii) Write a note on Fischer Tropsch synthesis.   (2)

(OR)

  b) Calculate the percentage efficiency of packing in case of body centered cubic crystal.   (5)

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