# First Mid Term Test - 2019

## Standard XII
### CHEMISTRY

Time: 1.30 hrs.                                              Marks: 35

## PART - I

I.  **Choose and write the correct answer:**                10x1=10

1.  Considering Ellingham diagram, which of the following metals can be used to reduce Alumina?

    a) Fe            b) Cu            c) Mg            d) Zn

2.  Match the List I and List II correctly by using the code given below.

| List I | | List II | |
|---|---|---|---|
| A) | Galvanisation | 1) | Copper |
| B) | Food packing material | 2) | Gold |
| C) | Bronze age | 3) | Zinc |
| D) | Dental filling | 4) | Aluminium |

Code:

|    | A | B | C | D |    |    | A | B | C | D |
|----|---|---|---|---|----|----|---|---|---|---|
| a) | 4 | 3 | 2 | 1 |    | b) | 3 | 4 | 1 | 2 |
| c) | 2 | 1 | 4 | 3 |    | d) | 3 | 1 | 4 | 2 |

2.  The basic structural unit of silicates is

    a) $(SiO_3)^{2-}$    b) $(SiO_4)^{2-}$    c) $(SiO)^-$    d) $(SiO_4)^{4-}$

4.  Among the halogens which is the most reactive and the strongest oxidising agent?

    a) Chlorine        b) Fluorine        c) Iodine        d) Bromine

5.  Consider the following statements.

    I)   The order of catenation property is $C >> Si > Ge > Pb$.

    II)  Crystalline boron is used as a rocket fuel igniter.

    III) Syngas and producer gas are the mixture of $(CO + H_2)$ and $(CO + N_2)$ respectively.

    Which of the above statement(s) is (are) correct?

    a) I and II        b) II only        c) II and III    d) I and III

6. Assertion : Due to Frenkel defect, density of the crystalline solid decreases.

Reason : In Frenkel defect, cation and anion leaves the crystal.

a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.

b) Both Assertion and Reason are correct. But Reason is not the correct explanation of Assertion.

c) Assertion is true but Reason is false.

d) Both Assertion and Reason are false.

7. Which among the following is an example for covalent solids?

a) Silicon carbide      b) Naphthalene

c) Glucose      d) Solid $CO_2$

8. If the initial concentration of the reactant is doubled, the time for half reaction is also doubled. What is the order of the reaction?

a) zero      b) one      c) fraction      d) none

9. Identify the incorrect statement regarding molecularity.

a) Assigned for each elementary step of mechanism.

b) It can be a fractional number.

c) It is the total number of reactants in an elementary step.

d) It can't be zero.

10. The approximate collisions for each molecule of a gas at room temperature and 1 atm pressure is

a) $10^{18}\,s^{-1}$      b) $10^{11}\,s^{-1}$      c) $10^6\,s^{-1}$      d) $10^9\,s^{-1}$

### PART - II

II. Answer any three questions. Q. No. 13 is compulsory: 3x2=6

11. Give an example for cyanide leaching.

12. Write a note on inert pair effect.

13. CO is a reducing agent. Justify with an example.

14. Give any four differences between crystalline solids and amorphous solids.

15. Show that in case of first order reaction, the time required for 99.9% completion is nearly ten times the time required for half completion of the reaction.

### PART - III

III. Answer any three questions. Q. No. 18 is compulsory: 3x3=9

16. Describe a method for refining nickel.

17. Write the preparation of potash alum.

18. Barium has a body centered cubic unit cell with a length of 508 pm along an edge. What is the density of barium in $g\ cm^{-1}$.

19. Write Arrhenius equation and explain the terms involved.

20. Explain the effect of catalyst on reaction rate with an example.

### PART - IV

IV. Answer all the questions:      2x5=10

21. a) i) Describe about electrolytic refining with an example. (3)

     ii) What is calcination? Give an example.      (2)

(OR)

b) i) Write the preparation of Borax from Colemanite. (3)

     ii) Draw the structure of inorganic benzene and diborane.      (2)

22. a) i) Write a short note on Schottky defect.      (3)

     ii) Calculate the number of atoms in a fcc unit cell. (2)

(OR)

b) i) Derive the rate constant expression of integrated rate law for a first order reaction.      (3)

     ii) The rate constant for a first order reaction is $1.54 \times 10^{-3}\,s^{-1}$. Calculate its half life time.      (2)

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