MOTHLY TEST JULY-2023

CLASS   : XII   **TIME   : 1.30 HRS**
SUBJECT : CHEMISTRY   UNIT-2,7   MARKS : 50

PART-I

Choose the correct answer   **10 x 1 = 10**

1. . Match the following
   (1) Fluorine   (i) Identification of coloured metal ions
   (2) Borax   (ii) strong oxidizing agent
   (3) Aluminium   (iii) Chalcogen present in volcanic ashes
   (4) Sulphur   (iv) Most abundant element
   (a)   (1) –(iii)   (2)-(ii)   (3)-(iv) (4)-(i)   (b) (1)-(ii)   (2)-(i)   (3)-(iv)   (4)-(iii)
   (c)   (1)-(iv)   (2)-(iii)   (3)-(ii)   (4)-(i)   (d) (1)-(ii)   (2)-(iv) (3)-(i)   (4)-(iii)

2. which of the following is not sp^2 hybridised?
   (a) Fullerene   (b) Graphite   (c) Diamond   (d) Graphene

3. . Match the following

List – I	List – II
A) Borazole	1) Flux
B) Boric acid	2) SiO_2
C) Quartz	3) Borazine
D) Borax	4) Eye lotion

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

4. The element that shows lowest catenation among the following p-block elements is
   (a) carbon   (b) silicon   (c) lead   (d) germanium

5. In diborane, the number of electrons that accounts for banana bonds is
   (a) six   (b) two   (c) four   (d) three

6. If the initial concentration of the reactant is doubled, the time for half reaction is also doubled. Then the order of the reaction is
   (a) Zero   (b) one   (c) Fraction   (d) none

7. The addition of a catalyst during a chemical reaction alters which of the following quantities?
   (a) Enthalpy   (b) Activation energy   (c) Entropy   (d) Internal energy

8. The rate constant of a reaction is $5.8 \times 10^{-2} S^{-1}$. The order of the reaction is
   (a) First order   (b) zero order   (c) Second order   (d) Third order

9. If 75% of a first order reaction was completed in 60 minutes , 50% of the same reaction under the same conditions   would be completed in
   (a) 20 minutes   (b) 30 minutes   (c) 35 minutes   (d) 75 minutes

10. The rate constant for a first order reaction is $1.54 \times 10^{-3} s^{-1}$. its half life time is ____
    (a) 450S   (b) 540S   (c) 350S   (d) 550S

PART-II

Answer any five questions. Q.no : 17 is compulsory   **5 x 2 = 10**

11. How will you convert boric acid into boron nitride?

12. Give the uses of borax.

13. Give one example for each of the following
    (i) icosagens   (ii) tetragens   (iii) pnictogens   (iv) chalcogens

14. Write Arrhenius equation and explains the terms involved

15. Give the schematic representation of proper and improper alignment of reactant for a general reaction $A_2 + B_2 \rightarrow 2AB$

16. Mention the factors affecting reaction rate

17. Complete the following reactions :
    i) $B(OH)_3 + NH_3 \rightarrow$ ii) $Na_2B_4O_7 + H_2SO_4 + H_2O \rightarrow$

PART-III

Answer any five questions. Q.no : 24 is compulsory   **5 x 3 = 15**

18. How will you identify the presence of borate radical?

19. What is catenation? Describe briefly the catenation property of carbon

20. What is an elementary reaction? Give the differences between order and molecularity of a reaction.

21. Give three examples for first order reaction

22. Write a short note on metallic nature of P-block elements ?

23. Explain the rate determininig step with an example

24. 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-IV

Answer all the questions.   **3 x 5 = 15**

25. a) i) Write short note on anomalous properties of first element of p-block.(3)
       ii) How will you prepare inorganic benzene ? (2)
                              (OR)
    b) i) Explain the preparation of potash alum(3)
       ii) Write a note on Fisher tropsch synthesis(2)

26. a) i) Write the any two uses of silicones(2)
       ii) Describe the structure of diborane(3)
                              (OR)
    b) i) Define half life period of reaction.(2)
       ii) write the difference between rate and rate constant of a reaction(3)

27. a) Derive integrated rate law for a zero order reaction . A $\rightarrow$ Product.(5)
                              (OR)
    b) i) Explain pseudo first order reaction with an example.(3)
       ii) Define average rate and instantaneous rate.(2)

****