

GUESS PAPER - 2

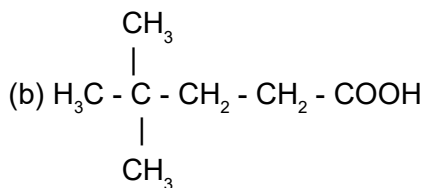
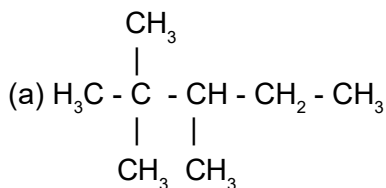
JR. CHEMISTRY

SECTION - A

I. Answer ALL questions :

[10 x 2 = 20]

1. What is Biochemical Oxygen Demand (BOD)?
2. Define Receptor Sink.
3. Which gas diffuses faster among N_2 , O_2 , CH_4 gases? Why?
4. The empirical formula of a compound is CH_2O . Its molecular weight is 90. Calculate the molecular formula of the compound.
5. Calculate the pH of 0.05 M H_2SO_4 solution.
6. Write the average composition of portland cement.
7. Give the formula and structure of Borazine (or Borzine).
8. What is allotropy? Give the crystalline allotropes of carbon.
9. What is meant by Dry ice? Give its applications.
10. Write IUPAC names of the following:



SECTION - B

II. Answer any SIX of the following Questions :

[6 x 4 = 24]

11. State and explain Graham's law of diffusion.
12. A carbon compound contains 12.8% carbon, 2% hydrogen, 85.1% bromine. The molecular weight of the compound is 187.9. Calculate the molecular formula.
13. Define heat capacity? What are C_p and C_v ? Show that $C_p - C_v = R$.
14. State Le-Chatelier's principle and apply it to the synthesis of ammonia by Haber's process.
15. Write any four reducing properties of hydrogen peroxide. Give equations.
16. Explain Borax bead test with a suitable example.
17. What is Hydrogen bond? Explain the different types of hydrogen bonds with example.
18. How is acetylene prepared from the following compounds:
a) Calcium carbide b) 1,2-dibromoethane

SECTION - C

III. Answer any Two of the following Questions :

[2 x 8 = 16]

19. How are the quantum number n , l and m_l arrived at? Explain the significance of these quantum numbers.
20. Define IE_1 and IE_2 . Why is $IE_2 > IE_1$ for a given atom? Discuss the factors that effect IE on an element.
21. Describe any two methods of preparation of benzene with corresponding equations. Explain the following benzene reactions
(a) Halogenation (b) Alkylation (c) Acylation (d) Nitration

* * * * *