



CHEMISTRY

BOOKS - VGS PUBLICATION-BRILLIANT

MODEL PAPER 3

Section A

1. What are DO, COD and BOD ?



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2. Define Basicity of acid and acidity of base.



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3. What are open, closed and isolated systems
? Give one example for each.



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4. Calculate kinetic energy of 5 moles of
Nitrogen at $27^{\circ}C$.



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5. What is Green house effect?



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6. State and explain the Hess's law of constant heat summation.



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7. What is heterogeneous equilibrium?

Write two heterogeneous reactions.



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8. Which of the alkali metals shows abnormal density? What is the order of the variation of density among the IA group elements?



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9. Why are the elements of group 1 called alkali metals ?

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10. Write the IUPAC names of :



a)

b) $CH_3CH = C(CH_3)_2$

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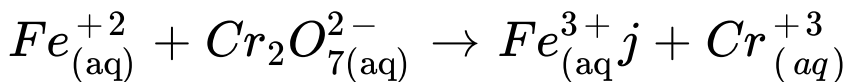
Section B

1. Define (a) RMS (b) average and (c) most probable speeds of gas molecules. Give their interrelationship,



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2. Balance the following equation in acid medium by Ion-electron method :



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3. Calculate the pH of the following basic solutions

a. $[OH^-] = 0.05M$ b.

$[OH^-] = 2 \times 10^{-4}M$



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4. Explain the hybridization involved in PCl_5 molecule.



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5. Write two oxidizing and two reducing properties of H_2O_2 .



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6. Explain the following :

a) Graphite is a good conductor.

b) Diamond has high melting point.



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7. Explain the factors favourable for the formation of cation in ionic bond.



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8. Write any two methods of preparation of diborane. How does it react with Ammonia .



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Section C

1. Write the postulates of Bohr's model of hydrogen atom. What are the limitations of Bohr's model of an atom ?



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2. Define IE_1 and IE_2 . Why is $IE_2 > IE_1$ for a given atom? Discuss the factors that affect IE of an element.



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3. Prepare benzene from acetylene, write equation. Explain the Friedel - Crafts's alkylation, Friedel - Crafts's acylation and sulphonation reaction of benzene.



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