



CHEMISTRY

BOOKS - FULL MARKS CHEMISTRY (TAMIL ENGLISH)

SAMPLE PAPER 16 (UNSOLVED)

Part I

1. Which of the following is/are true with respect to carbon -12?

A. relative atomic mass is 12 u

B. oxidation number of carbon is +4 in all its compounds.

C. 1 mole of carbon-12 contain 6.022×10^{22} carbon atoms.

D. all of these

Answer: A



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2. Identify the four quantum number values for $4d_{x^2 - y^2}$ electron are

A. $4, 2 - 2, + \frac{1}{2}$

B. $4, 0, 0, + \frac{1}{2}$

C. $4, 3, 2, + \frac{1}{2}$

D. $4, 3, 2, - \frac{1}{2}$

Answer: A



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3. Among the alkali metals which one form compounds with more covalent character?

A. Sodium

B. Potassium

C. Rubidium

D. Lithium

Answer: D



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4. Water is a

A. basic oxide

B. acidic oxide

C. amphoteric oxide

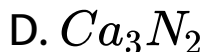
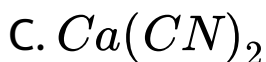
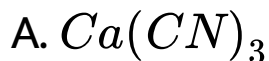
D. none of these

Answer: C



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5. The product obtained as a result of a reaction of nitrogen with CaC_2 is



Answer: C



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6. 25g of each of the following gases are taken at 27°C and 600 mm Hg pressure. Which of these will have the least volume ?

A. HBr

B. HCl

C. HF

D. HI

Answer: D



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7. Calculate the entropy change of a process

$H_2O_{(l)} \rightarrow H_2O_{(g)}$ at 373K. Enthalpy of vapourization of water is $40850 \text{ J Mole}^{-1}$.

A. $120 JK^{-1} \text{mol}^{-1}$

B. $9.1 \times 10^{-3} JK^{-1} \text{mol}^{-1}$

C. $9.1 \times 10^{-4} \text{mol}^{-1}$

D. $109.52 JK^{-1} \text{mol}^{-1}$

Answer: D



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8. Which of the following is not a general characteristic of equilibria involving physical processes?

A. Equilibrium is possible only in a close system at a given temperature

B. All measurable properties of the system remain constant

C. All the physical processes stop at equilibrium

D. The opposing processes occur at the same rate and there is dynamic but stable condition

Answer: C



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9. The Henry's law constants for two gases A and B are x and y respectively. The ratio of mole fractions of A to B is 0.2. The ratio of

mole fraction of B and A dissolved in water will be

A. $\frac{2x}{y}$

B. $\frac{y}{0.2x}$

C. $\frac{0.2x}{y}$

D. $\frac{5x}{y}$

Answer: D



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10. Statement I: CuCl is more covalent than NaCl.

Statement II: As compared to Na^+ , Cu^+ is small and have $3s^2, 3p^6 3d^{10}$ configuration and show greater polarisation.

A. Statement I & II are correct and II is the correct explanation of I.

B. Statement I & II are correct but II is not the correct explanation of I.

C. Statement I is correct but II is wrong.

D. Statement I is wrong and II is correct.

Answer: A



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11. A liquid which decomposes at its boiling point can be purified by

A. distillation at atmospheric pressure

B. distillation under reduced pressure

C. fractional distillation

D. steam distillation

Answer: B



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12. Identify the one which does not come under the organic addition reaction.

A. Hydration

B. Dehydration

C. Halogenation

D. Hydro halogenation

Answer: B



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13. Consider the nitration of benzene using mixed conc. H_2SO_4 and HNO_3 , if a large quantity of $KHSO_4$ is added to the mixture, the rate of nitration will be ...

A. unchanged

B. doubled

C. faster

D. slower

Answer: D



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14. Biochemical oxygen Demand value less than 5 ppm indicates a water sample to be

A. highly polluted

B. poor in dissolved oxygen

C. rich in dissolved oxygen

D. low COD

Answer: C



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Part II

1. 0.456 g of a metal gives 0.606 g of its chloride. Calculate the equivalent mass of the

metal.



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2. How alkali metals react with oxygen? Explain with equation.



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3. Li_2CO_3 decomposes readily whereas other carbonates are not. Why?



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4. Define – Graham's law of diffusion.



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5. What do you understand by the term formality?



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6. Mention the characteristics of covalent compounds.



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7. Give the two examples for each of the following type of organic compounds. (a)
Aromatic heterocyclic

(b) Non-benzenoid aromatic



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8. What are oxidation and reduction organic reactions? Give an example.



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9. List out the techniques used to reduce particulate pollutants for air.



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