



CHEMISTRY

KCEE PREVIOUS YEAR PAPERS

PRACTICE QUESTION PAPER 5

Chemistry

1. A solid has face centered cubic unit cell. If the radius of the anion is 241.5 pm, the radius of the cation is

A. 150 pm

B. 195 pm

C. 190 pm

D. 100 pm

Answer:



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2. The rate constant of a chemical reaction at 280K is $1.6 \times 10^{-6} \text{ s}^{-1}$. The activation energy

of this reaction is zero. The value of k for this reaction at 300K is

A. $1.6 \times 10^{-4} \text{ s}^{-1}$

B. $1.6 \times 10^{-5} \text{ s}^{-1}$

C. $1.6 \times 10^{-6} \text{ s}^{-1}$

D. Zero

Answer:



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3. A system at equilibrium is described by the equation

$\text{Heat} + \text{SO}_2\text{Cl}_2(g) \rightleftharpoons \text{SO}_2(g) + \text{Cl}_2(g)$ the addition of Cl_2 in the reaction mixture will shift the equilibrium into?



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4. A solution of naphthalene in benzene has a mole fraction of naphthalene equal to 0.10. What is the molality of the solution?

A. 2.3 m

B. 1.42 m

C. 3.1 m

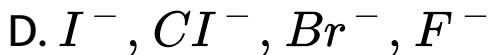
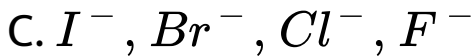
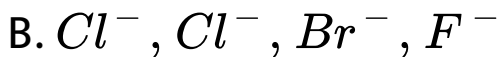
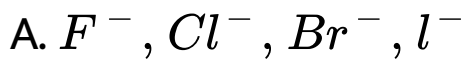
D. 1.9 m

Answer:



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5. Polarisability of halide ions increases in the order



Answer:



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6. The coagulation of 10 ml of gold solution is just prevented by an addition of 1 ml of 10%

NaCl in the presence of 0.025 g. of starch. The gold number of starch is:

A. 0.25

B. 0.025

C. 25

D. 250

Answer:



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7. The total energy of a Bohr's orbit is proportional to (n = Principal quantum number)

A. n^2

B. $1/n$

C. n

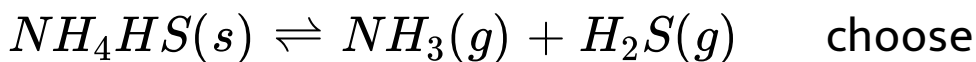
D. $1/n^2$

Answer:



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8. Consider the following equilibrium:



the correct relation:

A. $K_p = K_c(RT)^1$

B. $K_p = K_c(RT)^2$

C. $K_p = K_c(RT)^3$

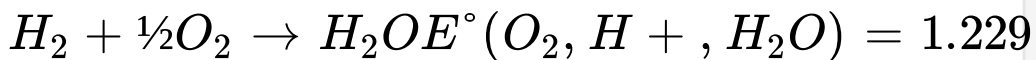
D. $K_p = K_c$

Answer:



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9. The reaction in a fuel cell is :



V. The emf of the cell is

A. Zero

B. – 1.229 V

C. 1.229 V

D. $0.059 \log 1.229$

Answer:



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10. The number of significant figures in 0.00046100 are

A. 3

B. 8

C. 5

D. 6

Answer:



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11. A compound was found to contain 10.5% by weight of nitrogen. The minimum molecular weight of the compound would be

A. 89.5

B. 133.3

C. 100

D. 175

Answer:



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12. The boiling point of a pure liquid is 353.23 K. When 1.80 g of a non-volatile solute is dissolved in 90 g of this pure liquid, the boiling point becomes 354.11 K. The molar mass of the solute is (given that the boiling point elevation constant function of the pure liquid is $2.53 \text{ K} \cdot \text{kg} \cdot \text{mol}^{-1}$)

A. $1.7 \text{ g} \cdot \text{mol}^{-1}$

B. $25 \text{ g} \cdot \text{mol}^{-1}$

C. $5.4 \text{ g} \cdot \text{mol}^{-1}$

D. $58 \text{ g} \cdot \text{mol}^{-1}$

Answer:



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13. Thomson performed his famous “cathode ray tube” experiment, and came to the conclusion that

A. Under ordinary conditions of temperature and pressure gases in general are good conductors of electricity

B. The value of ' e/m ' of the electrons, as determined in the experiment independent on the nature of the gas taken in the tube.

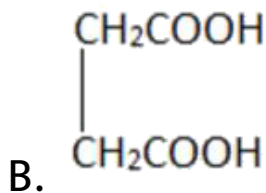
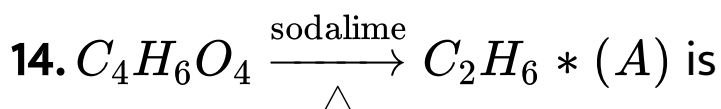
C. The value of ' e/m ' of the electrons as determined in the experiment depends on the nature of the cathode used.

D. The colour of the "light" observed in the experiment depended on the nature of the gas in the tube.

Answer:



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C. Both correct

D. none is correct

Answer:



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15. For the preparation of p - nitroiodobenzene from p - nitroaniline, the best method is:

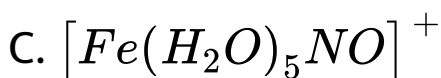
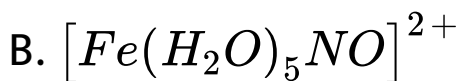
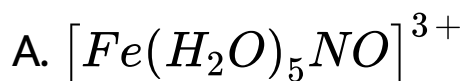
- A. $NaNO_2$ / HCl followed by KI
- B. $NaNO_2$ / HCl followed by CuCN
- C. $LiAlH_4$ followed by I_2 .
- D. $NaBH_4$ followed by I_2 .

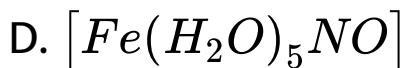
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16. The composition of brown ring obtained during the qualitative detection of nitrates with ferrous sulphate and sulphuric acid corresponds to:





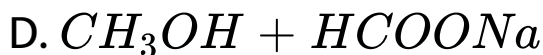
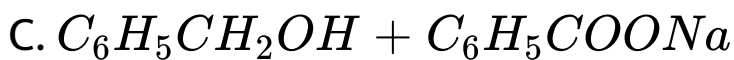
Answer:



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17. The reaction between benzaldehyde and formaldehyde in the presence of conc. NaOH gives





Answer:



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18. Which of the following is used as an antiseptic?

A. Dettol

B. Bithional

C. Iodine

D. All of these

Answer:



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19. Which of the following is not soluble in nitric acid?

A. PbS

B. HgS

C. CuS

D. CdS

Answer:



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20. Which isomer of hexane can give two monochlorinated compounds ?

A. n – Hexane

B. 2, 3 – Dimethyl butane

C. 2, 2 – Dimethyl butane

D. 2- Methylpentane

Answer:



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21. Schiff's reagent give pink colour with:

A. Acetaldehyde

B. Acetone

C. Acetic Acid

D. Methyl acetate

Answer:



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22. Which of the following statements is true for structure of sucrose:

A. C – 1 of glucose is linked to C – 2 of fructose by α – glycosidic linkage.

B. C – 1 of glucose is linked to C – 2 of fructose by β – glycosidic linkage.

C. C – 1 of glucose is linked to C – 4 of fructose by α – glycosidic linkage.

D. C – 1 of glucose is linked to C – 4 of fructose by β – glycosidic linkage.

Answer:



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23. Which of the following statement is false?

A. Gas molecules travel in straight line between collisions.

B. For an ideal gas, PV is always constant at all pressures.

C. 1.0 g. of H_2 and 1.0 g. of O_2 contain equal number of molecules at STP.

D. average speed of gas molecules
Proportional to square root of its

molecular mass

Answer:



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24. A metal salt when subjected to charcoal cavity test gives a shining metallic bead that marks paper. This indicates the presence of salt of :

A. Ag

B. Pb

C. Cu

D. Sulphate

Answer:



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25. The roasting of mercuric sulphide in the air in metallurgical process produces

A. HgO

B. Hg

C. $HgSO_3$

D. $HgSO_4$

Answer:



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26. Which of the following is a bent non-linear molecule?

A. OF_2

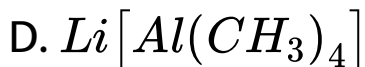
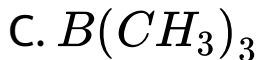
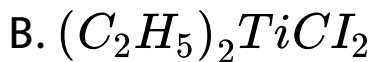
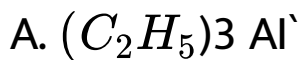


Answer:



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27. Which of the following organometallic compound is used in Zeigler – Natta catalyst for polymerization of ethylene ?



Answer:



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28. Xanthoprotein test is given by:

A. Phenylalanine

B. Tyrosine

C. Tryptophan

D. All of these

Answer:



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