



CHEMISTRY

BOOKS - MTG WBJEE CHEMISTRY (HINGLISH)

MODEL TEST PAPER 1

Chemistry Category 1 Single Option Correct Type 1
Mark

1. The pH of the solution containing 10 mL of 0.1 N NaOH and 10 mL of 0.05 N H_2SO_4 would be

A. 1

B. 0

C. 7

D. > 7

Answer: D



View Text Solution

2. Oxidation of benzene with air at 725 K in presence of V_2O_5 as catalyst gives

A. maleic acid

B. malic acid

C. malonic acid

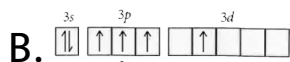
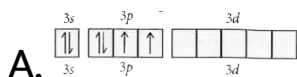
D. maleic anhydride

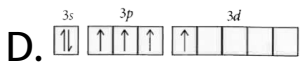
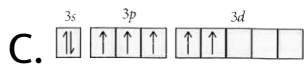
Answer: D



View Text Solution

3. Which of the following has maximum energy ?

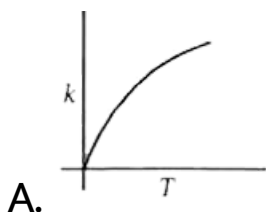


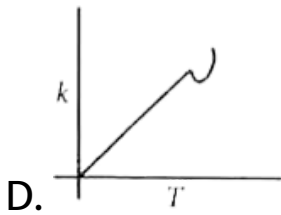
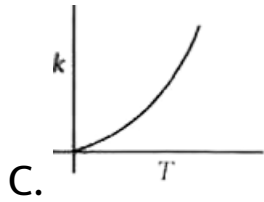
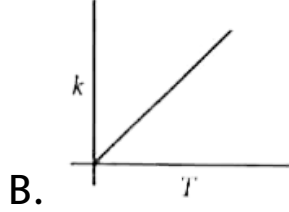


Answer: C

 [View Text Solution](#)

4. Which curve corresponds to the temperature dependence of the rate constant (k) of a simple one step reaction ?





Answer: C



View Text Solution

5. Which of the following plots correctly represents variation of equivalent conductance (Λ_{eq}) with dilution for a strong electrolyte ?



Answer: B



View Text Solution

6. Extractionh of zinc from zinc blende is achieved by

A. electrolytic reduction

B. roasting followed by reduction with carbon

C. roasting followed by reduction with another metal

D. roasting followed by self-reduction.

Answer: B



View Text Solution

7. Phenol gives tribromophenol when treated with bromine in aqueous solution by only o- and p-bromophenols in Cl_4 solution because

A. in aqueous solution the bromine is ionised

B. in aqueous solution, phenol exists in equilibrium with phenoxide ion which has more activating effect

C. in $\text{C}I_4$ the electrophilicity of Br_2 increase

D. in $\text{C}I_4$ the other positions of benzene rings
are blocked by the solvent.

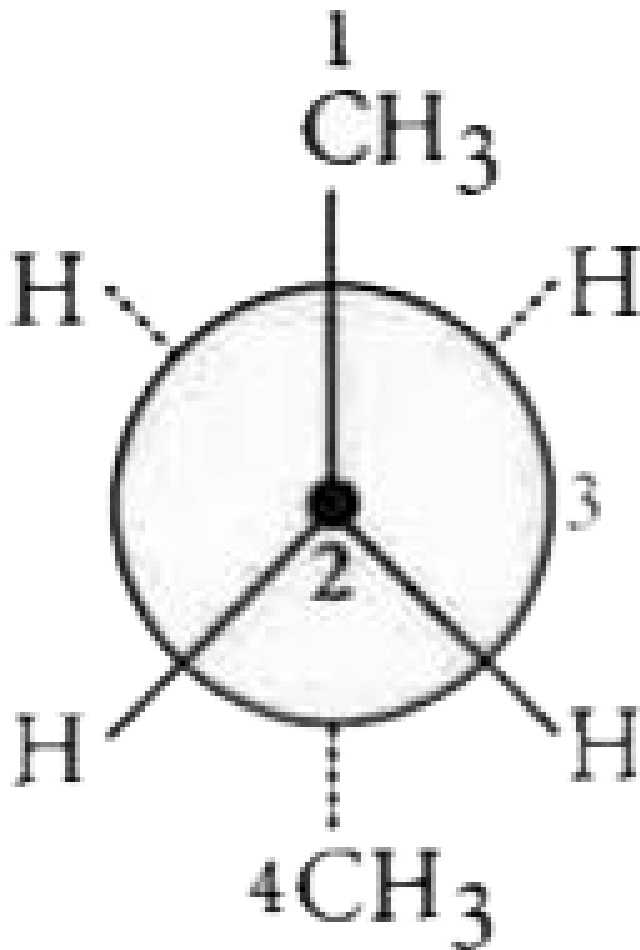
Answer: B



View Text Solution

8. In the given conformation , if C_2 is rotated
about $C_2 - C_3$ bond anticlockwise by an angle of

120° then the conformation obtained is



A. fully eclipsed conformation

B. partially eclipsed conformation

C. gauche conformation

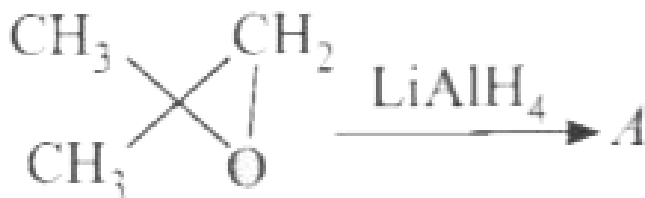
D. staggered conformation

Answer: C



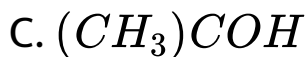
View Text Solution

9. Identify the product (A) in the given reaction.



A. $(\text{CH}_3)_2\text{H}_2\text{SO}_4$

B. $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$

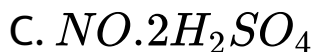
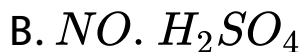
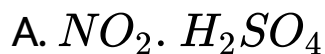


Answer: C



View Text Solution

10. In the manufacture of H_2SO_4 the nitrated acid from the Gay-Lussac's tower chemically.



D. *NO. HSO₄*

Answer: D



View Text Solution

11. Which of the following is tranquilizer ?

A. Chlordiazepoxide

B. Meprobamate

C. Equanil

D. All of these

Answer: D



View Text Solution

12. Two gases A and B having the same volume, diffuse through a porous partition in 20 and 10 seconds respectively. The molecular mass of A is 49 u. Molecular mass of B will be

A. 50.00 u

B. 12.25 u

C. 6.50 u

D. 25.00 u

Answer: B



View Text Solution

13. A compound of mol. Wt. 180 is acetylated to give a compound of mol. Wt . 390. The number of amino groups in the initial compound is

A. 2

B. 4

C. 5

D. 6

Answer: D



View Text Solution

14. Which of the following reagents reacts differently with HCHO, CH_3CHO and CH_3COCH_3 ?

A. HCN

B. NH_2NH_2

C. NH_2OH

D. NH_3

Answer: D



View Text Solution

15. Aluminium vessels should not be washed with material containing washing soda because

A. washing soda reacts with aluminium to form soluble meta-aluminate.

B. washing soda is expensive

C. washing soda is easily decomposed

D. washing soda reacts with aluminium to form insoluble aluminium oxide

Answer: A



View Text Solution

16. In an experiment, addition of 4.0 mL of 0.0005 M $BaCl_2$ to 16.0 mL of arsenious sol just causes complete coagulation in 2hrs. The flocculating value of the effective ion is

A. Cl^- , 1.0

B. Cl^- .2.0

C. Ba^{2+} , 1.0

D. Ba^{2+} , 0.5

Answer: C



View Text Solution

17. A 20 mL, urea solution of 2% (w/V) is mixed with 80mL of glucose solution of 4% (w/V) at 300 K. Calculate the osmotic pressure of the solution .

A. 6.02 atm

B. 1.642 atm

C. 4.378 atm

D. 3.01 atm

Answer: A



[View Text Solution](#)

18. A certain substance A is mixed with an equal amount of a substance, B. At the end of 1.0 hr, A is 70% reacted. How much will it be left unreacted at the end of 2.5 hr, reaction with respect to A of first order?

A. 10 %

B. 5 %

C. 3 %

D. 1 %

Answer: B



View Text Solution

19. At low pressure, the fraction of the surface covered follows

A. zero order kinetics

B. first order kinetics

C. second order kinetics

D. fractional order kinetics.

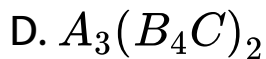
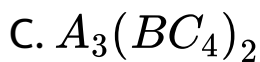
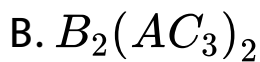
Answer: B



View Text Solution

20. A compound contains atoms, A ,B and C. The oxidation number of A is +2, of B is +5 and of C is -2. The possible formula of the compound is

A. ABC_2

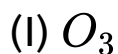


Answer: C



View Text Solution

21. Arrange the following species according to their bond angle order.



A. $I > II > III$

B. $II > I > III$

C. $III > II > I$

D. $II > III > I$

Answer: A



View Text Solution

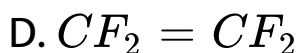
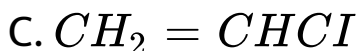
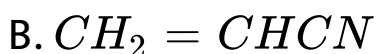
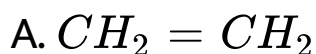
22. Which one of the following statement regarding photochemical smog is not correct ?

- A. Photochemical smog is formed by the combination of smoke, dust and fog containing sulphur dioxide from polluted air.
- B. Photochemical smog causes irritation in eyes and throat
- C. Carbon monoxide does not play any role in photochemical smog formation
- D. Photochemical smog is oxidising in nature.

Answer: A



23. Non-Stick cookwares generally have a coating of a polymer, whose monomer is



Answer: D



24. Which of the following chemicals is used as a depressant in separating ZnS from PbS in froth floatation process ?

A. KCN

B. NaCN

C. $CuSO_4$

D. NaCl

Answer: B



View Text Solution

25. To which orbit k , the electron in the hydrogen atom will jump on absorbing 12.1 eV of energy ?

A. 2rd orbit

B. 3rd orbit

C. 4th orbit

D. 5th orbit

Answer: B



View Text Solution

26. The correct order of electron gain enthalpy values ($\Delta_{eg}H$) for the halogen atoms is

A. $F < Cl < Br < I$

B. $I < Br < F < Cl$

C. $I < Br < Cl < F$

D. $Cl < Br < I < F$

Answer: B



View Text Solution

27. Select the incorrect statement.

A. SO_2 gas has oxidising as well as reducing behaviour .

B. D_2O reacts slowly than H_2O in chemical reactions

C. KI_3 reacts with conc. H_2SO_4 to produce HI

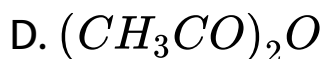
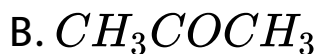
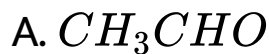
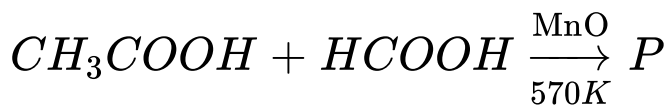
D. O_3 oxidises KI to I_2 of the given reaction is

Answer: C



View Text Solution

28. Main product P of the given reaction is

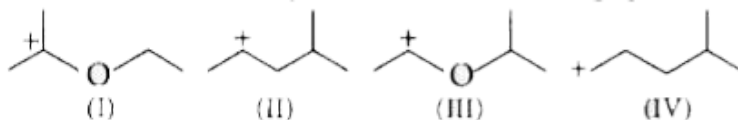


Answer: A



View Text Solution

29. The correct stability order for the following species is



A. (II) gt (IV) gt (I) gt (III)

B. (I) gt (II) gt (III) gt (IV)

C. (II)gt (II)gt (III) gt (IV)

D. (I) gt (III) gt (II) gt (IV)

Answer: D



View Text Solution

30. The half - life of a radioactive isotope is three hours. If the initial mass of the isotope was 300 g. the mass which remains undecayed in 18 hours would be

A. 2.34 g

B. 1.17 g

C. 9.36 g

D. 4.68 g

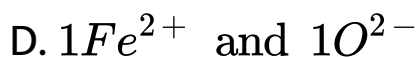
Answer: D



View Text Solution

Chemistry Category 2 Single Option Correct Type 2 Mark

1. FeO crystal has a simple cubic structure and each edge of the unit cell is 5 \AA . Taking density of the oxide as 4 g/cc , the number of Fe^{2+} and O^{2-} ions present in each unit cell are



Answer: A



View Text Solution

2. For the complex, $[Co(NH_3)_5CO_3]ClO_4$ the coordination number, oxidation number, of d-electrons and number of unpaired electrons on the metal are, respectively

A. 6,3,6,0

B. 7,2,7,1

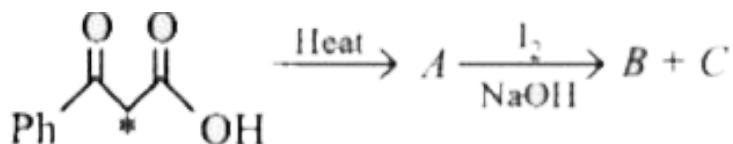
C. 7,1,6,4

D. 6,3,6,4

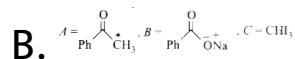
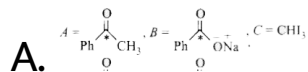
Answer: A

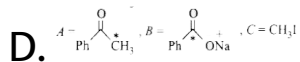
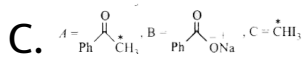
 [View Text Solution](#)

3. In the following reactions sequence .



the correct structures of A,B and C are

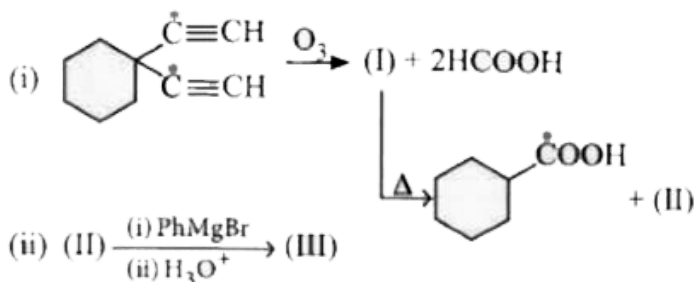


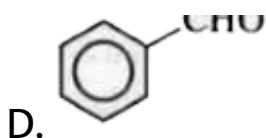
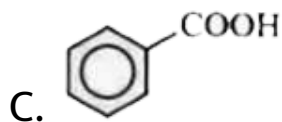
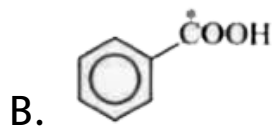
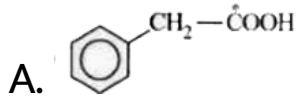


Answer: C

 [View Text Solution](#)

4. The Product (III) of the following reactions sequence is



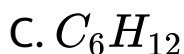
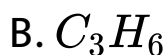


Answer: B

 [View Text Solution](#)

5. The empirical formula of an organic compound containing carbon and hydrogen is CH_2 . The

mass of one litre of this organic gas is exactly to that of one litre of N_2 . Therefore, the molecular formula of the organic gas is



Answer: A



View Text Solution

Chemistry Category 3 Single Option Correct Type 2 Mark

1. Which statement is/are correct ?

A. C_2H_5Br reacts with alcoholic KOH to form



B. C_2H_5OH when treated with metallic sodium gives ethane.

C. C_2H_5Br when treated with sodium ethoxide forms diethyl ether.

D. C_2H_5Br with AgCN forms ethyl cyanide.

Answer: C



View Text Solution

2. Mark the incorrect statement (s).

A. Potassium dichromate oxidises a secondary alcohol into a ketone .

B. Potassium permanganate is a weaker oxidising agent than potassium dichromate.

C. Potassium dichromate oxidises a secondary alcohol into aldehyde.

D. Alkaline $KMnO_4$ solution oxidises tertiary alcohol to a mixture of a ketone and an acid.

Answer: B::C::D



View Text Solution

3. Which of the following conditions is/are favourable for the feasibility of a reaction ?

A.

$$\Delta H = +ve, T\Delta S = +ve \text{ and } T\Delta S < \Delta H$$

B. $\Delta H = -ve, T\Delta S = +ve$

C.

$$\Delta H = -ve, T\Delta S = -ve \text{ and } T\Delta S < \Delta H$$

D.

$$\Delta H = +ve. T\Delta S = +ve \text{ and } T\Delta S < \Delta H$$

Answer: A::B::C



View Text Solution

4. The hemiacetal form of glucose is indicated by

A. reaction with $(CH_3CO)_2O$ /pyridine

B. oxidation with Tollens' reagent

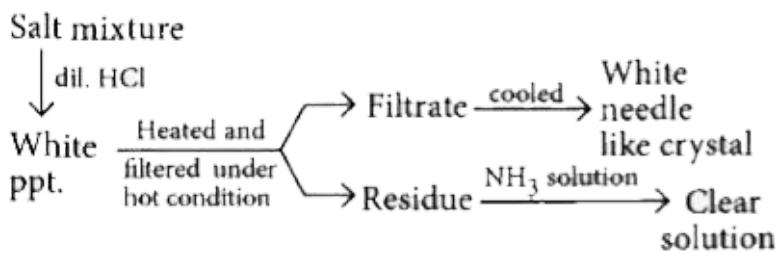
C. reduction with HI/P

D. glycoside formation

Answer: A::D

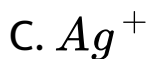
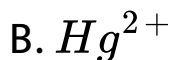
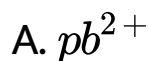


View Text Solution



5.

Which of the following cations are present in the given salt mixture ?



Answer: A::C





[View Text Solution](#)