



# CHEMISTRY

## BOOKS - MODERN PUBLICATION

### SAMPLE PAPER 2017

#### Exercise

1. Which kinds of isomerism are exhibited octahedral  $Co(NH_3)_4Br_2Cl$ ?

A. geometrical and ionisation

B. geometrical and optical

C. optical and ionization

D. geometrical only

**Answer: a**



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2. Benzylchloride can be prepared from toluene by reacting with :

A.  $HCL$

B.  $SO_2CL_2$

C.  $SOCL_2$

D.  $NaOCl$

**Answer: b**



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**3. Aspirin is**

A. Sedative

B. Antipyretic

C. antibiotic

D. antiseptic

**Answer: b**



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**4. Which amino acid has phenolic - OH group as its backbone ?**

A. Glycine

B. Leucine

C. Serine

D. Tyrosine

**Answer: d**



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5. which One of the following is a cross-linked polymer

A. Bakelite

B. Glycogen

C. Nylon

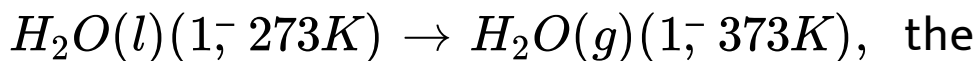
D. Polythene

**Answer: a**



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6. For the process,



correct set of thermodynamic parameters is :

A.  $\Delta G=0, \Delta S=+ve$

B.  $\Delta G=0, \Delta S= -ve$

C.  $\Delta G=+ve, \Delta S=0$

D.  $\Delta G=-ve, \Delta S=0$

**Answer: d**



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7. When two reactants, A and B are mixed to give products C and D, the reaction quotient,  $Q$  at the initial stages of the reaction :

A. is zero

B. decreases with time

C. is independent of time

D. increases with time

**Answer: a**



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8. The solubility of  $Ca(OH)_2$  is  $s \text{ molL}^{-1}$ . The

$K_{sp}$  under the same conditions is :



A.  $4s^3$

B.  $3s^4$

C.  $4s^2$

D.  $s^3$

**Answer: a**



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9. Uranium (mass number 238 and atomic number 92) emits an alpha particle. The

product has mass number and atomic number  
respectively as :

A. 238 and 92

B. 234 and 90

C. 238 and 90

D. 236 and 90

**Answer: b**



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10.  $XeF_4$  and  $XeF_6$  are expected to be

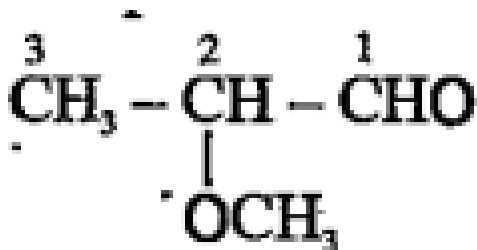
- A. oxidising
- B. reducing
- C. unreactive
- D. strongly basic

**Answer: a**



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11. write the IUPAC name of the following compound:



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12. Write the unit of cell constant.



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13. What happens when nitrobenzene reacts with conc.  $HNO_3$  in the presence of conc.  $H_2SO_4$  ?



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14. Esterification does not take place between ethyl alcohol and excess  $H_2SO_4$  at  $170^\circ C$ . Explain.



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15. Concentrated hydrogen fluoride exists in the molecular formula of .....



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16. Phenol on oxidation with air gives .....



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17. If the activation energy of a reaction is low, the reaction is relatively. .... .





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**18.** Fill in the blanks : For the gaseous reaction  
 $aA + bB \leftrightarrow cC + dD$ ,  $\Delta n$  is equal to .....



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**19.** The thermal stability of the hydrides of group 16 ..... down the group.



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20. complete the following reaction and write the names of A and B.



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21. Use EAN rule and predict the molecular formula of nickel carbonyl?

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**22.** How does copper metal react with ammonia? Give the reaction with the product formed.



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**23.** State Le - Chatelier 's principle and explain the effect of temperature on the synthesis of  $NH_3$ .



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**24.** What are pesticides ? What are different types of pesticides ? Name one of each type.



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**25.** What is Stephen reduction reaction? Give an example.



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26. Calculate the entropy change involved in the conversion of one mole of water at  $373K$  to vapour at the same temperature. (Latent heat of vaporisation of water at this temperature,  $\Delta H_{vap} = 2.257kJg^{-1}$ )



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27. What is the equilibrium constant expression for the reaction?





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**28.** The concentration of hydrogen ion in sample of soft drinks is  $3.8 \times 10^{-3} M$ . What is its PH?



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**29.** How is benzoic acid converted to benzaldehyde?



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30. What is Benzoin condensation reaction?

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31. Derive the Nernst equation of electrode potential at  $25^{\circ}C$  for the electrode reaction,



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**32.** A compound 'A' having molecular formula  $C_2H_5O_2N$ , on reaction with Sn and conc. HCl gives a compound B which when treated with  $NaNO_2$  and dil. HCl gave compound C having molecular formula  $C_2H_6O$ . The compound C when treated with Na metal give effervescences and when reacts with  $CrO_3$  give a saturated aldehyde having 2 carbon atoms. Determine the structures and names of A, B and C along with the sequence of reactions.



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**33.** Give one method of preparation of  $XeF_4$  .

Mention one reaction in which it acts as an oxidising agent Give its structure



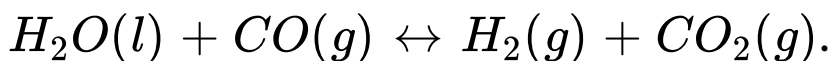
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**34.** How are the solvents classified on the basis of proton transfer ?



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**35.** If one mole of water and one mole of  $CO$  are taken in a 10 litre vessel and heated to  $986^\circ C$ , 40% of water reacts with  $CO$  as in



Calculate the equilibrium constant for the reaction at the temperature mentioned.



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**36.** In a first order reaction, the reactant concentration decreases from 0.8 M to 0.4 M



in 15 min. What is the time taken for the concentration to change from 0.1 M to 0.025 M?



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**37.** How do you prepare benzoic acid from n-propyl benzene



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**38.** What is Schmidt reaction ? Write the structure of the product of this reaction .



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**39.** Explain Carbylamine reaction.



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**40.** What are soap and detergents ? How do they differ ?



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**41.** Bring out the following conversions :

Benzene to 4-Bromonitrobenzene



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**42.** Describe the Dennis method of preparation of fluorine with a neat diagram.

How does it react with glass?



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**43.** Discuss the principles of extraction of copper from its sulphide ore. How does it react with dil and conc.  $HNO_3$ ? Give reactions.



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