



# CHEMISTRY

## BOOKS - UNITED BOOK HOUSE

### MODEL PAPER 14

#### Exercise

1. Which one among the following is correct for orthorhombic system

A.  $a \neq b \neq c, \alpha = \beta = \gamma = 90^\circ$

B.  $a = b = c, \alpha \neq \beta \neq \gamma 90^\circ$

C.  $a = b = c, \alpha = \beta = \gamma \neq 90^\circ$

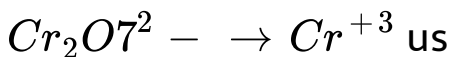
D.  $a = b = c, \alpha = \beta = \gamma = 90^\circ$

**Answer:**



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2. Quantity of charges required to reduce one mole



A. 3F

B. 0.3F

C. 6F

D. 0.6F

**Answer:**



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3. Which one of the following is applicable for adsorption

A.  $\Delta G > 0$

B.  $\Delta S > 0$

C.  $\Delta H < 0$

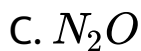
D.  $\Delta H > 0$

**Answer:**



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4. In the manufacturing of  $2HNO_3$ ,  $NH_3$  is primarily oxidised to



**Answer:**



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5. Transitional metal ions shows colour due to

- A. Absrobs light
- B. Emits light
- C. paramagnetic
- D. d-d transition

**Answer:**



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6. Which one is not expected to be a ligand

A. NO

B.  $NH_4^+$

C.  $NH_2CH_2CH_2NH_2$

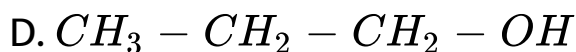
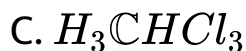
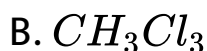
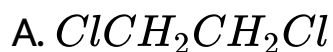
D. CO

**Answer:**



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7. Which of the following gives propyne on hydrolysis ?

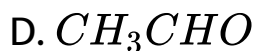
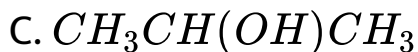
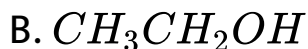
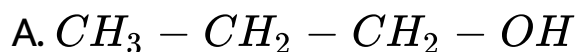


**Answer:**



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8. Which one does not response to haloform reaction?



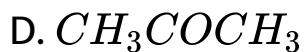
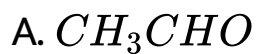
**Answer:**



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9. Which one does not give positive Tollen's test-



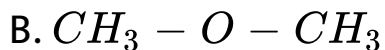


**Answer:**



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**10.** Methyl amine when reacts with  $HNO_2$  produces



C.  $CH_3OH$

D.  $CH_3CHO$

**Answer:**



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**11.** RNA does not contain

A. Adenin

B. Urasil

C. Thymin

D. Cytosin

**Answer:**



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**12. Which one is a natural polymer**

A. Polythine

B. Cellulose

C. Polyvinyl chloride

D. Nylon-6,6

**Answer:**



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**13. Salol is**

A. Anteseptic

B. Antepyratic

C. Antacid

D. Tranguilizer

**Answer:**



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14. Which one of the non caloric artificial sweetening agent used in food

A. Surcrose

B. Glucose

C. Aspertame

D. Sucralose

**Answer:**



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15. Velocities of Cations and anions of the electrolytes produces in salt bridge is\_\_\_\_\_.

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16. \_\_\_\_\_ Faradays current when passed through  $AgNO_3$  solution produces 10.788 gm Ag at cathod.

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17. Give an example of homogeneous catalyst.

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18. What is poling process?

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19. Which one is more stable and why  $Fe^{2+}$  or  $Fe^{3+}$  ?

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20. What is the chemical name of Aspirin?

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**21.** Why the boiling point of salt water is higher than pure water?



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**22.** State the conditions for ideal solution.



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**23.** Why alum is used in small cut during shaving?



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24. Write two differences between physisorption and chemisorption.

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25. Give an example of reducing nature of  $SO_2$ .

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26. Why phosphine shows reducing nature instead of oxidising nature?

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27.  $[Ni(CO)_4]$  is tetrahedral but diamagnetic why?

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28. State the structure and name of monomer unit of natural rubber.

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29. What is the packing efficiency of bcc lattice? If the diagonal of bcc unit cell be  $8\sqrt{3}$  find the radius of the atom.

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**30.** A metal forms a face centred cubic lattice. If the radius of the atom be  $1.28 \text{ \AA}$  find the radius of the atom.

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**31.** 34.2 gm Sucrose (Molecular wt 342) is dissolved in 1000 gm of water. Find the freezing-point of the solution  $k_f = 1.86 \text{ K Kg mol}^{-1}$

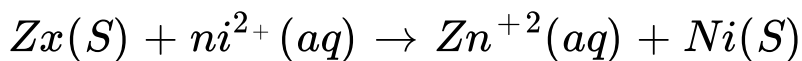
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**32.** Find the osmotic pressure of a solution at  $27^{\circ}C$  when 10 gm Glucose and 6 gm urea is dissolved in 500 ml water.



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**33.** Calculate the EMF of the electrochemical cell for which the following cell reaction is given below-

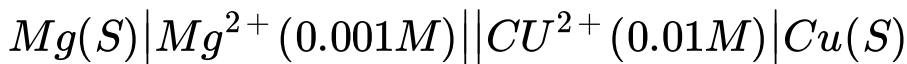


Given  $E_{zn^{2+}/zn}^{\circ} = -0.76V$   $E_{Ni^{2+}/Ni} = -0.25V$ .



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**34.** Calculate the E.M.F. for the cell given below and identify the cathod and anode.



$$E_{Mg^{2+} / Mg} = - 2.36V \text{ and } E_{Cu^{2+} / Cu} = + 0.34V.$$

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**35.** Why CuO can be carbon reduced but not CaO?  
What is gaung?

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**36.** Write differences between roasting and calcination. Name a basic flux?



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**37.**  $CuCl_2$  is blue coloured but  $CuCl$  colourless. Explain why? State the general electronic configuration of 'f' block element.



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**38.** Name the aldehyde which response in haloform reaction



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**39.** How would you chemically differ ethyl chloride and chlorobenzene?



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**40.** Give one example :-

Carbyl-amine reaction.



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**41.** Give one example :-

Diaz coupling reaction.



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**42.** Give one example :-

Hoffmann degradation reaction



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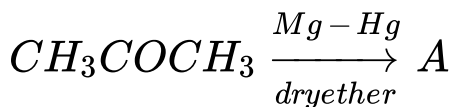
**43.** State the chemical equation when potassium thalimide is strongly heated with ethyl iodide and



the product thus obtained is hydrolysed by KOH solution. What is Hinsberg reagent?

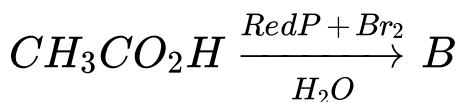
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44. Identify A-F



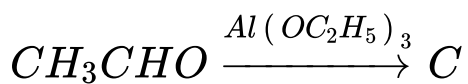
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45. Identify B



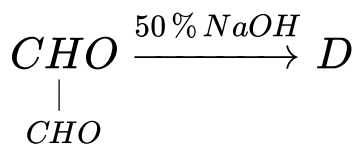
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46. Identify A-F



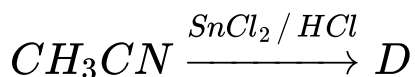
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47. Identify D



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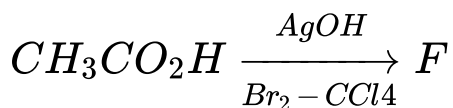
48. Identify D





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49. Identify F

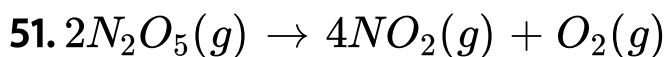


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50. What is Mutarotations? What will happen when Aldohexose reacts with  $NaBH_4$ ?



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The above reaction is carried out in a closed container. After 5 sec concentration of  $NO_2$  is increased by  $4 \times 10^{-2}$  mole  $L^{-2}$ . In this time interval find (a) Rate of the reaction (b) Rate of disappearance of  $N_2O_5$



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52. Give the Formula of Carnallite.



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**53.** Half life period of a first order reaction 15 min.

Calculate the rate constant and time for 80% completion of the reaction



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**54.** State with balanced chemical equation.

$K_2Cr_2O_7$  is heated with concentrated HCl.



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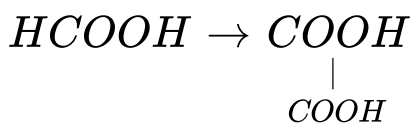
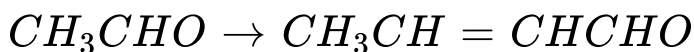
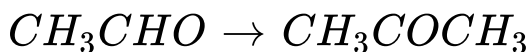
**55.** State with balanced chemical equation.

$AgNO_3$  solution is treated with  $PH_3$



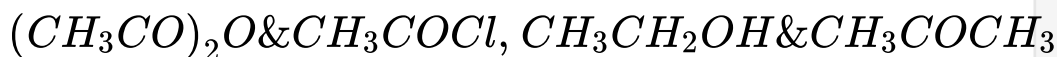
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56. Carry out the following conversion in possible minimum steps.



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57. How would you chemically differ by a single chemical reaction.





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