



# CHEMISTRY

## BOOKS - SHARAM PUBLICATION

### SOLVED PAPER 3

#### Exercise

1. The compound, which is added to soap to impart antiseptic properties is



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2. What is the size of colloidal particles in  $\text{Å}$  unit ?



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3. Which of the following noble gases has the highest positive electron gain enthalpy value ?



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4. What do u mean by the term collision frequency?



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5. Arrange the following ions for their increasing coagulating power for coagulation of +vely charged sol like  $Fe(OH)_3$ .

$Cl^-$ ,  $SO_4^{2-}$ ,  $[Fe(CN)_6]^{4-}$ ,  $PO_4^{3-}$



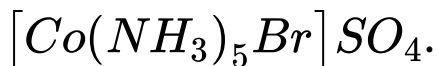
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6. Why is silicagel used as dehumidizer?



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7. Write the IUPAC name of



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8. Benzaldehyde and acetone can be best distinguish using

A. Fehling solution

B. Sodium hydroxide solution

C. 2,4-DNPH

D. Tollen's reagent

**Answer:**



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9. Iodine molecules are held in the crystal lattice by

A. London forces

B. Coulombic forces

C. Covalent bonds

D. dipole-dipole interaction

**Answer:**



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**10.** 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?

A. 30 mins

B. 15 mins

C. 7.5 mins

D. 60 mins

**Answer:**



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11. The cause of variable oxidation state among transition elements is

A. They all exist in more than one oxidation state

B. They all form complex compounds

C. The valence electrons in them are found in two different subshells

D. They all have paired subshells

**Answer:**







12. The amount of solute (molecular mass  $60 \text{ gmol}^{-1}$ ) that must be added to 180g water so that the vapour pressure of water is lowered by 10% is

A. 30g

B. 60g

C. 120g

D. 15g

**Answer:**



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**13.** Which of the following is not a condensation polymer?

A. Bakelite

B. Nylon-6

C. Dacron

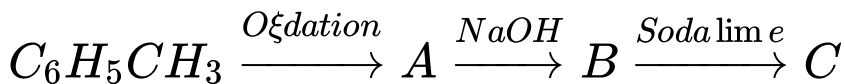
D. Teflon

**Answer:**



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**14.** Name the product C in the following reactions



A. Benzene

B. Sodium benzoate

C. Benzoic acid

D. Benzaldehyde

**Answer:**



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15. What is molal elevation constant of a solvent ?



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16. Atoms are present per unit cell of a body centred cubic crystal \_\_\_\_.



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17. Given that

$$E_{Ni^{2+} | Ni}^0 = -0.25V \text{ and } E_{Cu^{2+} | Cu}^0 = +0.34V$$

. From this that suggest whether a solution of 1 (M)  $CuSO_4$  be stored in a nickel vessel or not.



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18. What happens when magnesium nitride is boiled with water ?



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19. What is the action of  $Cl_2$  with ammonia ?



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20. What happens when chlorobenzene is treated with NaOH at 623k and 300 atm pressure and the resulting solution is treated with dilute acid ?



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21. Define thermosetting and thermoplastic polymers with example.



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22. What are the functions performed by histamine in the body?



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23. Why is the complex ion  $[Cu(NH_3)_4]^{2+}$  square planar and tetrahedral?

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**24.** What are different allotropes of sulphur?  
Which of them is most stable at room temperature and what happens to it on heating?

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**25.** Write a note on Rosenmund's reduction.

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**26.** How is pure alumina obtained from bauxite by leaching process? Explain.



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**27.** How will you distinguish between  $1^\circ$ ,  $2^\circ$  and  $3^\circ$  aliphatic amines by nitrous acid?



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**28.** What is the action of ozone with PbS and ethylene ?



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**29.** State Kohlrausch's law.



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**30.** What is the difference between Schottky defect and Frenkel defect.





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31. A 4% solution of sucrose ( $C_{12}H_{22}O_{11}$ ) having mol mass 342 is isotonic with 3% solution of an unknown organic substance . Calculate the molecular mass of the unknown substance.



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32. How is sulphur dioxide prepared from iron pyrites? What happens when this gas is passed

through lime water?



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33. What are barbiturates ?To which class of drug they belong?



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34. How is  $CH_3CH_2NH_2$  prepared from  $CH_3CN$



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35. How is  $CH_3CH_2NH_2$  prepared from  $C_2H_6NO_2$ ?



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36. How are ethers prepared by Williamson synthetic method ? What happen when ethyl methyl ether is heated with conc . HI at 373K



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**37.** How are ethers prepared by Williamson synthetic method ? What happens when ethyl methyl ether is treated with dilute sulphuric acid under pressure?



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**38.** The b.p of ethyl alcohol is higher than that of dimethyl ether. Why?



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**39.** Discuss the general trend in properties of transition elements with reference to formation of coloured ions.



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**40.** Discuss the general trend in properties of transition elements with reference to variable oxidation states.



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**41.** Discuss the general trend in properties of transition elements with reference to ionization energy.



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**42.** Give a method of preparation of ethyl amine from ethyl bromide.



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**43.** Discuss the mechanism of  $S_N2$  reaction.



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**44.** What happens when 2- bromobutane is treated with alc. KOH solution.



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**45.** What does depression of freezing point mean? How is the molecular mass of a non-

volatile solute determined from depression of freezing point measurement?



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**46.** The boiling point of benzene is  $353.2K$ . When  $1.8\text{ g}$  of a non - volatile solute was dissolved in  $90\text{ g}$  benzene the boiling point was raised to  $354.1K$ . Calculate the molecular mass of the solute. ( $K_b$  of benzene =  $2.53\text{ K kg mol}^{-1}$ )



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**47.** What are emulsions? What are their different types? Give one example of each type.



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**48.** What are lyophilic and lyophobic colloids ?  
Give one example of each.



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**49.** Define gold number.



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