

Instructions :

- (i) Attempt all questions.**
- (ii) Question Nos. 1 to 4 are objective types. Carries total 20 marks.**
- (iii) Question Nos. 5 to 8, each question carries 2 marks. (word limit 30 words)**
- (iv) Question Nos. 9 to 12, each question carries 3 marks (word limit 75 words)**
- (v) Question Nos. 13 to 17, each question carries 4 marks. (word limit 120 words)**
- (vi) Question Nos. 18 to 20, each question carries 5 marks. (word limit 150 words)**
- (vii) Internal choice is given to question Nos. 5 to 20.**

- Q.1. Choose the correct option: 5 × 1 = 5
- (a) If coordination number of Cs^+ is 8 in CsCl then coordination number of Cl^- ion is-
- (a) 8 (b) 4
 (c) 6 (d) 12
- (b) Unit of cell constant is :
- (a) $\text{ohm}^{-1} \text{cm}^{-1}$ (b) cm
 (c) ohm cm (d) cm^{-1}
- (c) The rate of chemical reaction depends upon-
- (a) Active mass (b) Atomic mass
 (c) Equivalent weight (d) Molecular mass
- (d) Adsorption process is-
- (a) Exothermic (b) Endothermic
 (c) No heat change (d) None of these
- (e) Which has maximum electron affinity-
- (a) Fluorine (b) Chlorine
 (c) Bromine (d) Iodine

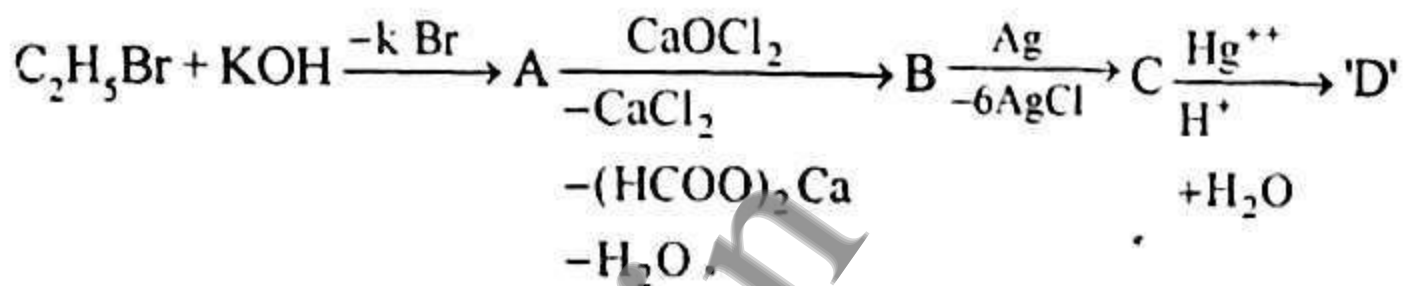
- Q.2. Fill in the blanks: 5 × 1 = 5
- (a) There are..... type of crystal system.
- (b) The substance on whose surface adsorption takes place is called.....
- (c) Chemical formula of corrosive sublimate is
- (d) Magnetic property of noble gases is.....
- (e) The formula of antiknock organometallic substance is.....

- Q.3. Write answer in one word of each: 5 × 1 = 5
- (a) Write Bragg's equation.
- (b) Which bond links amino acids together.
- (c) Write the formula of benzene diazonium chloride.
- (d) Write oxidation state of iron in $[\text{Fe}(\text{CN})_6]^{3-}$.
- (e) Which noble gas forms maximum compounds?

- Q.4. Match the pairs correctly: 5 × 1 = 5
- | Column 'A' | Column 'B' |
|----------------------------|----------------------------|
| (a) Smell of mustard oil | (i) Biotin |
| (b) Explosive | (ii) Glass |
| (c) Hair fall | (iii) Methylisothiocyanate |
| (d) Amorphous solid | (iv) T.N.T. |
| (e) Heteropolysaccharidies | (v) NaCl |
| | (vi) Glycozen |

- Q. 5. What is peptization? 2
(OR) Why is sky blue in colour?
- Q. 6. Explain why ionisation energy of noble gases are highest. 2
(OR) Why elements of group 17 are called halogen.
- Q. 7. What is effective atomic number. Explain with examples. 2
(OR) Write the IUPAC names of the following compounds.
(i) $K_2 [HgI_4]$ (ii) $[Ag(NH_3)_2]Cl$
- Q. 8. What are carbohydrates? Give types of carbohydrates. 2
(OR) Write the diseases which are caused by lack of following vitamins:
(i) Vitamin A (ii) Vitamin D
- Q. 9. Differentiate between molarity and molality (any three). 3
(OR) Write three differences in solution having positive deviation and negative deviation.
- Q. 10. If 4 gm. NaOH is present in 500 ml solution then determine the normality of the solution. 3
(OR) Explain the following terms:
(i) Formality (ii) Parts per million (iii) Osmotic pressure
- Q. 11. What are inner transition elements. 3
(OR) Transition elements are good catalysts explain.
- Q. 12. Write three differences between Lanthanides and Actinides. 3
(OR) Describe the preparation of $KMnO_4$ from Pyrolusite with equation.
- Q. 13. Describe four factors affecting rate of a reaction. 4
(OR) What is half-life period of a reaction? Calculate half-life period of a first order reaction.
- Q. 14. Write the reaction taking place in blast furnace when haematite is converted into pig iron with diagram. 4
(OR) Write four different chemical reaction of copper with nitric acid. Give equations also.
- Q. 15. An alcohol 'A', on reaction with conc H_2SO_4 gives an alkane 'B'. 'B' after Bromination with sodamide give dehydrogenated compound 'C'. 'C' on reaction of H_2SO_4 in presence of $HgSO_4$ gives 'D'. Identify 'A', 'B', 'C' & 'D'. 4

(OR) Identify 'A', 'B', 'C', & 'D'.



Q. 16. Differentiate between phenol and alcohol (any four) 4

(OR) Explain the following.

(i) Lucas reagent (ii) Reimer-Tiemann reaction.

Q. 17. Write short notes on the following. 4

(i) Perkin reaction (ii) Urotropine

(OR) What happens when (Give only equation).

(i) Acetone reacts with conc. H_2SO_4 .

(ii) Benzoic acid reacts with SOCl_2 .

(iii) Acetic acid reacts with ammonia.

(iv) Acetic acid reacts with caustic soda.

Q. 18. What is Kohlrausch's law? Give its any one application. 5

(OR) What is a standard hydrogen electrode? How is it made?

Q. 19. Write formulas and structures of five oxyacids of sulphur. 5

(OR) Describe Brodie's ozonizer with a diagram.

Q. 20. Write short notes on the following. 5

(i) Charak (ii) Nalanda Vishwa Vidyalaya

(OR) Explain in brief the following-

(i) Anti-fertility drugs.

(ii) Disinfectants.

(iii) Sulpha drugs.

(iv) Analgesic

(v) Antipyretics.