

SECTION – I

2. Write short answers to any EIGHT (8) questions :

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- (i) Why the second value of electron affinity of an element is usually shown with a positive sign? Give example.
- (ii) Prove that ZnO is an amphoteric oxide.
- (iii) Write down the chemical formula of dolomite and asbestos.
- (iv) What is milk of magnesia and where it is used?
- (v) What is anode coating?
- (vi) Why does the compounds of transition elements are coloured?
- (vii) Define nucleophile with two examples.
- (viii) Which is the best method for the preparation of alkyl halide? Give reaction.
- (ix) Define saponification number with an example.
- (x) Write down the structures of acrylic acid and acrylonitrile.
- (xi) Differentiate between copolymer and terpolymer. Give examples.
- (xii) Why nitrogenous fertilizers are supplied to plants?

3. Write short answers to any EIGHT (8) questions :

16

- (i) What is the effect of temperature on N_2O_4 ?
- (ii) How does HNO_3 react with Cu metal?
- (iii) Why iodine has metallic luster?
- (iv) Which halogen is used as an antiseptic?
- (v) Explain the type of bonds and shape of HCHO molecule using hybridization approach.
- (vi) Write the structural formulas of the possible isomers of C_4H_{10} .
- (vii) How 2-Butene will react with following reagents :
(a) O_2 in the presence of Ag (b) Br_2 in CCl_4
- (viii) What is Raney Nickel and give its use?
- (ix) How to test the unsaturation of alkenes? Give reaction.
- (x) What are secondary pollutants?
- (xi) What is meant by term BOD and COD?
- (xii) How does ozone help to protect us?

4. Write short answers to any SIX (6) questions :

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- (i) What are different types of boric acid? Give their names.
- (ii) What are products formed when aluminium reacts with HCl and H_2SO_4 ?
- (iii) Give four common properties of group IVA elements.
- (iv) How is ethyl benzene prepared through Wurtz fitting reaction?
- (v) How are ethyl chloride and ethyl amine prepared from ethanol?

(Turn Over)

(2)

4. (vi) How will you convert ethanol into ethanal?
(vii) Give four uses of acetaldehyde.
(viii) What is Ninhydrin test? Which compounds are detected through this test?
(ix) How would you carry out the following conversions :
(a) Acetic acid into acetamide. (b) Acetic acid into acetone.

SECTION – II

Note : Attempt any **THREE** questions.

5. (a) Discuss variation of melting and boiling points of elements across the short periods of periodic table. 4
(b) Give any four points to elaborate the peculiar behaviour of beryllium. 4
6. (a) How does fluorine differ from its own family members? 4
(b) What is setting of cement? Discuss the reactions taking place in first 24 hours in setting of cement. 4
7. (a) Define hybridization and describe sp-hybridization of ethyne. 4
(b) Write a note on Beta-Elimination Reactions of alkyl halides. 4
8. (a) How does ethyne reacts with : 4
(i) Halogen acid
(ii) Strong alkaline KMnO_4 solution
(iii) Water in the presence of $\text{HgSO}_4 / \text{H}_2\text{SO}_4$
(iv) Ammonia in the presence of Al_2O_3 .
- (b) Explain haloform reaction by giving four reaction of halogen with : 4
(i) CH_3CHO (ii) CH_3COCH_3 (iii) $\text{CH}_3 - \overset{\text{OH}}{\underset{|}{\text{CH}}} - \text{CH}_3$ (iv) $\text{CH}_3\text{CH}_2\text{OH}$
9. (a) Give two reactions in which benzene behave as saturated compounds and two in which benzene behave as unsaturated compound. 2,2
(b) How will you prepare bakelite and picric acid from phenols. 3,1

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