

CHEMISTRY QUESTION PAPER

Time : 2 Hrs.

Max. Marks : 40

Q. 1. Select and write the most appropriate answer from the given alternatives for each sub-question : [8]

- (i) The f-block elements belonging to the 5 f series are all (1)
(a) Radioactive (b) Non-radioactive
(c) Metalloid (d) Inert
- (ii) Molecular formula of chloropicrin is (1)
(a) C_6H_5NC (b) $(CH_2)_6N_4$
(c) CCl_3NO_2 (d) $COCl_2$
- (iii) Primary alcohols are prepared by catalytic hydrogenation of aldehydes in presence of as a catalyst. (1)
(a) Aluminium bromide (b) Fluoboric acid
(c) Dry ether (d) Palladium
- (iv) In urotropine, the number of C - C single bonds is (1)
(a) 9 (b) 6
(c) 4 (d) 0
- (v) Which of the following compounds does NOT give acetic acid on oxidation? (1)
(a) Ethanol (b) Propan-1-ol
(c) Propan-2-ol (d) 2 methylpropan-2-ol
- (vi) A secondary alkyl halide is heated with excess of ammonia, the major product obtained is (1)
(a) Primary amine (b) Secondary amine
(c) Tertiary amine (d) Quaternary ammonium salt
- (vii) The carbon atoms of glucose molecule which take part in osazone formation are (1)
(a) C_4 and C_5 (b) C_2 and C_3
(c) C_3 and C_4 (d) C_1 and C_2
- (viii) Diethyl ether is a metamer of (1)
(a) methoxy methane (b) 1-ethoxy propane
(c) 1-methoxy propane (d) Butan-2-ol

Q. 2 (A) Attempt any ONE : [8]

- (i) How is acetic acid prepared from - (2)
(a) Dry ice
(b) Methyl cyanide
- (ii) Explain why are amines basic in nature. (2)

(B) Attempt any ONE :

- (i) Explain Homolytic fission. (2)
- (ii) How is Nylon-66 prepared? (2)

(C) Answer the following :

- (i) How is phenol prepared from - (2)
(a) Aniline
(b) Chlorobenzene
- (ii) What is the action of the following reagents on ethanal? (2)
(a) Fehling's solution
(b) Tollen's reagent

Q. 3 (A) Answer any ONE : [8]

- (i) Define optical activity. Discuss the optical activity of Lactic acid. (3)
- (ii) How are simple ethers and mixed ethers prepared by Williamson's Synthesis? (3)
How is pinacol obtained from acetone?

(B) Attempt any ONE :

- (i) What is the action of sulphuric acid at different temperatures and different concentrations on the following compounds? (3)
(a) Ethanol
(b) Propan-2-ol
(c) 2-methyl propan-2-ol
- (ii) What are conjugated proteins? How is peptide linkage formed in proteins? (3)
- (C) Answer the following :**
- (i) What is the action of ethyl magnesium iodide on ethyl methanoate, in equimolar quantities? (2)

Q. 4 (A) Answer the following : [8]
With the help of Energy Profile Diagram, explain the mechanism of alkaline hydrolysis of tertiary butyl bromide. (4)

(B) Attempt any ONE :

(i) Write the general outer electronic configuration of lanthanides and actinides. Give the differences between lanthanides and actinides. (4)

(ii) Write the uses of (4)

(a) Terylene

(b) Aspirin

What are food preservatives ? Mention any 'two' chemical methods for the preservation of food.

Q. 5 (A) Attempt any ONE : [8]

(i) How is chloroform prepared from ethanol ? (4)

(ii) Explain Aldol condensation. (4)

(B) Attempt any TWO :

(i) What are Phenols? How will you distinguish between ethanol and phenol ? (2)

(ii) How is ethanamine prepared by using (2)

(a) Acetaldoxime

(b) Nitroethane

(iii) Distinguish between Oils and Fats. (2)