

2021

Time : 3 Hours

Maximum Marks : 75

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer Five questions, selecting at least one from each Group, in which Q. No. 1 is compulsory.

1. Explain any three of the following : $5 \times 3 = 15$

(a) Na^+ in aqueous solution moves faster than Li^+ in aqueous solution.

(b) Transport number of an ion is function of absolute velocities of ions.

(c) Aniline is weaker base than methylamine.

(d) Phenol is acidic in nature.

(e) Nitro group in nitrobenzene is meta-directing.

Group - A

2. (a) Discuss specific conductance, equivalent conductance & molar conductance. $7\frac{1}{2} \times 2 = 15$

(b) How does dilution affect specific equivalent & molar conductivities ?

3. (a) Explain Kohlrausch's Law. $7\frac{1}{2} \times 2 = 15$

(b) Illustrate Nernst equation for electrode potential.

4. Write notes on any two of the following : $7\frac{1}{2} \times 2 = 15$

(a) Calomel electrode

(b) Promoters & Poison

(c) Acid base catalysis

D-806

Group - B

5. (a) Explain active methylene compounds. Why's the methylene group active? $5+4+6=15$

(b) Write down the synthesis of ethyl acetoacetate.

(c) Starting for ethyl acetoacetate how can you synthesize the following :

(i) 2-Hexamone

(ii) Succinic acid

(iii) 4-Methyluracil

6. (a) What are carbohydrates? Explain with examples. $5+10=15$

(b) Discuss the structure of glucose.

7. (a) What are hydroxy acid? cite example. $5+10=15$

(b) Discuss the optical isomerism of lactic acid.

8. Write an account of any three of the following: $5 \times 3 = 15$

(a) Benzil Benzilic acid rearrangement

(b) Perocin reactor

(c) Benzoin condensation

(d) Baeyer villiger oxidation

9. (a) How is phenol obtained for coal tar? $9+6=15$

(b) Starting for phenol how can you obtain the following : <https://www.lnmuonline.com>

(i) Phenyl acetate

(ii) Benzoquinone

(iii) Azo dye

10. Write notes on any three of the following : $5 \times 3 = 15$

(a) Aromaticity

(b) Muta rotation

(c) Orientation is ions substituted aromatic compounds

(d) Geometrical isomers

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