

BSC. PART - II EXAMINATION - 2008

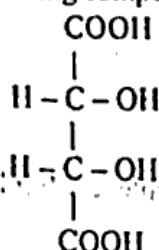
CHEMISTRY HONOURS ORGANIC

Answer any five questions including Q. No. 1 which is compulsory

1. Choose the correct answer

- (a) The number of asymmetric carbon atoms present in D-Glucose is
(i) 3 (ii) 4 (iii) 5 (iv) None of these
- (b) The reaction of aniline with benzoyl chloride in presence of NaOH produces
(i) Acetanilide (ii) Benzanilide (iii) Benzamide (iv) None of these
- (c) The reduction of lactic acid with HI gives
(i) Acetaldehyde (ii) Propionic acid (iii) N-Propyl iodide (iv) None of these
- (d) Hybridisation of carbon in benzene is
(i) sp^2 (ii) sp^3 (iii) sp (iv) None of these
- (e) Polyester is formed by the condensation of
(i) Terephthalic acid and ethylene glycol (ii) Acetic acid and ethylene glycol
(iii) Benzoic acid and ethylene glycol (iv) None of these
- (f) Nylon 66 is made from
(i) 1, 3-Butadiene (ii) Chloroprene (iii) Adipic acid (iv) None of these
- (g) The finger print region in IR spectrum is in between
(i) $2300 - 2100\text{ cm}^{-1}$ (ii) $3600 - 3200\text{ cm}^{-1}$
(iii) $1500 - 667\text{ cm}^{-1}$ (iv) none of these

(h) The following compound contains



- (i) Plane of symmetry (ii) Centre of symmetry (iii) Axis of symmetry
- (i) The reaction of sodium phenoxide with CO_2 to produce salicylic acid is
(i) Friedel-Crafts reaction (ii) Reimer-Tiemann reaction
(iii) Perkin reaction (iv) Kolbe reaction
- (j) Lactic acid is
(i) α -Hydroxypropionic acid (ii) β -Hydroxypropionic acid
(iii) Propionic acid (iv) None of these
2. What is active methylene compound? How will you prepare diethyl malonate?
Starting from diethyl malonate how will synthesise?
(i) Succinic acid (ii) Crotonic acid
3. What are carbohydrates? How are they classified? How will you convert glucose into fructose and vice versa?
4. (a) How will you synthesis citric acid from glycerol?
(b) Prove that Citric acid molecule contains
(i) One $-\text{OH}$ group (ii) Three COOH groups
Justify your answer with two chemical reactions in each case
5. Explain any two of the following
(i) Reimer-Tiemann reaction (ii) Claisen Condensation (iii) Gattermann's synthesis

6. (a) How phenol is isolated from coal tar?
(b) Starting from phenol how will you obtain
(i) Benzene (ii) Picric acid (iii) Phenolphthalein.
7. How will you introduce the following groups in the benzene ring?
(a) $-\text{NO}_2$ (b) $-\text{Cl}$ (c) $-\text{SO}_3\text{H}$
Explain the reactions with mechanism
8. Explain the following (i) Aniline is weaker base than methyl aniline
(ii) Acetic acid is stronger acid than phenol
(iii) The amino group in aniline is ortho and para directing
(iv) Amides are not basic in nature
9. Write notes on any two of the following
(a) Hydrogenation of oils (b) Synthetic rubber (c) Beer-Lambert law

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