

BSC. PART - II EXAMINATION - 2015

CHEMISTRY HONOURS ORGANIC

- Choose the most appropriate answer of the following :
 - Which one of the following is not an active methylene compound ?
 - $\text{ClCH}_2\text{COOC}_2\text{H}_5$
 - $\text{CH}_3\text{COCCH}_2\text{COCCH}_3$
 - $\text{CH}_3\text{COCCH}_2\text{COOC}_2\text{H}_5$
 - $\text{NCCH}_2\text{COOC}_2\text{H}_5$
 - Phenol is a stronger acid than :
 - Carbonic acid
 - O-Cresol
 - O-Nitrophenol
 - P-Nitrophenol
 - Which one of the following can not be used as acetylating agent, in Friedel-Craft's reaction ?
 - CH_3COCl
 - $(\text{CH}_3\text{CO})_2\text{O}$
 - CH_3COOR
 - None of these
 - Which one of the following is most basic ?
 - m-Nitro aniline
 - o-Nitro aniline
 - p-Nitro aniline
 - 2, 4 Dinitro aniline
 - Which one of the following acid decarboxylate on heating to give acetic acid ?
 - Pyruvic acid
 - Acetoacetic acid
 - Lactic acid
 - Malonic acid
 - Which one of the following is a natural polymer ?
 - Celluloid
 - Viscose rayon
 - Terylene
 - Cellulose
 - Which of the following region in IR is known as functional group region?
 - $1300-4000\text{ cm}^{-1}$
 - $900-1300\text{ cm}^{-1}$
 - $650-900\text{ cm}^{-1}$
 - None of these
 - Mutarotation is exhibited by :
 - All monosaccharides
 - All disaccharides
 - All polysaccharides
 - All carbohydrates
 - When Acetaldehyde is treated with HCN followed by hydrolysis an acid obtained is :
 - Tartaric acid
 - Citric acid
 - Acetic acid
 - Lactic acid
 - Decarboxylation of sodium salicylate with soda lime forms :
 - Benzene
 - Benzoic acid
 - Phenol
 - None of these
- Explain the mechanism and application of any two of the following :
 - Reformatsky reaction
 - Friedel-Craft's reaction
 - Sandmeyer's reaction
 - Kolbe's reaction
- What are hydroxy acids ?
 - What is the action of heat on α , β and γ - hydroxy acids ?
 - How does lactic acid react with the following ?
 - Cone H_2SO_4
 - Fenton's reagent
- What is Keto-enol tautomerism ?
 - Describe one method of preparation of Diethyl malonate.
 - Starting from Diethyl malonate how would you synthesize the following :
 - Crotonic acid
 - Barbituric acid
 - Butanoic acid
- What is diazotization ?
 - How benzenediazonium chloride is prepared in the laboratory ?
 - Starting from benzene diazonium chloride how would you prepare the following :
 - Benzene
 - Iodo benzene
 - phenol
- How would you bring about the following conversions ?
 - Toluene to Benzaldehyde
 - Aniline to m-nitroaniline
 - Phenol to Picric acid
 - Benzene to Acetophenone
 - Ethanol to Lactic acid

7. Explain any five of the following :

- (a) Trichloro acetic acid is stronger than acetic acid.
- (b) Diethyl amine is stronger base than triethyl amine.
- (c) The amino group in aniline is ortho-and paradirecting.
- (d) Prefix D is given to Fructose even though it is Laevorotatory.
- (e) Amides are not basic in nature.
- (f) Phenol behaves as an acid.
- (g) Methylene group in diethyl malonate is very reactive.

OR, How will you synthesize the following :

- (a) Teflon (b)PVC (c) Thinkols (d) Saran (e) Polystyrene

8. (a) What are carbohydrates ?

(b) How they are classified ?

(c) How will you convert glucose into fructose and vice-versa ?

OR, How would you distinguish the following ?

- (a) Soap and synthetic detergents (b) Oil and fats (c) Chain growth polymerization and vinyl polymerization (d) Saponification value and acid value

9. Write short notes on any two of the following :

(a) IR spectroscopy (b) Bathochromic and hypochromic shifts

(c) Beer-Lambert law

OR, (a) Define chromophore and auxo chromophore

(b) Explain the different types of electronic transitions in UV spectroscopy.

(c) Which is more stable and why-Benzyl carbocation or ethyl carbocation?

10. Write the formula of the main product and name of the reaction of the following

