Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

III SEMESTER B.TECH. (CHEMICAL ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2017

SUBJECT: ORGANIC CHEMISTRY [CHM 2101]

REVISED CREDIT SYSTEM

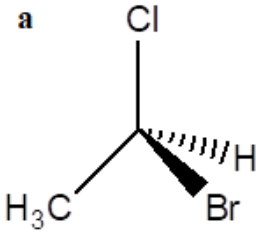
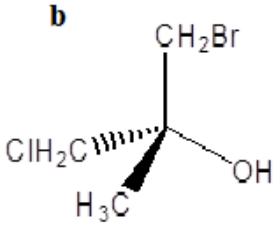
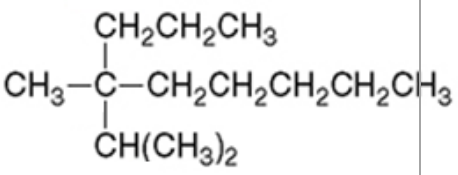
18/11/2017

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Missing data may be suitably assumed.

1A.	What are amino acids? Explain properties of amino acids based on its structure.Explain the classification of proteins according to composition.	**5**
1B.	Give the reactions for the following preparations: i) Lipp synthesis ii) Skraup synthesis iii) Gabriel synthesis	**3**
1C.	**a.** Explain the following terms; i)Dextrins ii) Denaturation **b**.Give reason- Toluene undergoes nitration more readily than nitrobenzene	**2**
2A.	What are dyes? Discuss the classification of dyes based on their application? Explain the Modern theory of colour.	**5**
2B.	Give the reaction mechanism of sulphonation and Friedel-crafts acylation of benzene.	**3**
2C.	Write the chemical equation for the reaction of sucrose with the following reagents i) Na/Hg in H_2O ii) $Sr(OH)_2$ iii) $CH_3COOOCCH_3$ iv) Con.HNO_3	**2**
3A.	Explain the factors in favor and against of Kekule structure?What are polysaccharides? Differentiate between the two components of starch.	**5**
3B.	Give the method of preparation of the following: i) Methyl orange ii) Malachite green iii) Blankophor-R	**3**
3C.	How is pyridine synthesized? Explain why pyridine is more basic than pyrrole and quinoline.	**2**
4A.	Explain the Syn-Anti and E-Z notations in oximes with examples. Give the mechanism of two reactions involving carbanions.	**5**

4B.	Outline the synthesis of the following: i) Furosemide ii) Propanolol Iii) Cimetidine	**3**
4C.	Give reason for the following: i. Biphenyl amines are less basic than aniline ii. Fructose reduces Tollen's reagent	**2**
5A.	Write two reactions which generate carbenes. Discuss the structure of carbenes and give two examples of reactions mediated by carbenes.	**5**
5B.	Assign R or S configuration to the stereogenic centre of following molecules showing the steps followed. **a**  **b**  **c** 	**3**
5C.	Explain from the modern theory of aromaticity why cyclooctatetrene does not act as an aromatic compound. Give characteristic reaction of the cyclic forms of glucose	**2**