

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86**  
(For candidates admitted during the academic year 2011 – 12 & thereafter)

**SUBJECT CODE: 11CH/MC/OC34**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2014**  
**BRANCH IV- CHEMISTRY**  
**THIRD SEMESTER**

REG.NO .....

**COURSE : MAJOR CORE**

**PAPER : ORGANIC CHEMISTRY-I**

**TIME : 30 MINUTES**

**MAX.MARKS : 30**

**SECTION – A**

**(30x1=30)**

**ANSWER ON THE QUESTION PAPER ITSELF.**

**Answer all the questions.**

**I Choose the correct answer:**

1. Glucose and fructose can be distinguished by  
a) phenyl hydrazine    b) hydroxylamine    c) bromine water    d) Fehling's solution
2. The diastereomers which differ in the configuration at C-1 are called \_\_\_\_\_  
a) epimers    b) anomers    c) enantiomers    d) conformers
3. The reagent used in Wolff Kishner reduction is  
a)  $\text{NH}_2\text{NH}_2/\text{NaOH}$     b)  $\text{Zn}/\text{Con.HCl}$     c)  $\text{C}_6\text{H}_5\text{COOH}$     d)  $\text{Al}(\text{t-OBu})_3$
4. Acrolein undergoes reduction with  $\text{LiAlH}_4$  to give  
a) acrylic acid    b) glycerol    c) crotonaldehyde    d) allyl alcohol
5. For the formation of benzyne type of intermediate from a simple haloarene, there should be a hydrogen \_\_\_\_\_ to the halogen.  
a) meta    b) ortho    c) para    d) meta and para
6. Lactose is composed of  
a) glucose and galactose    b) glucose and glucose  
c) glucose and fructose    d) fructose and galactose
7. Aldehydes and ketones form hydrocarbons by  
a) oppenaur oxidation    b) Baeyer Vileger reaction  
c) Claisen- Schmidt reaction    d) Clemmensen reduction
8. When 1.3-Butadiene reacts with  $\text{HBr}$  at high temperature the major product formed follows  
a) 1,2 addition    b) 1,4 addition    c) 2,3 addition    d) 1,3 addition
9. Starch is composed of  
a) amylose + amylopectin    b) amylose +cellulose  
c) amylopectin+ inulin    d) amylopectin +cellobiose
10. In \_\_\_\_\_ elimination two groups depart from the same atom  
a) beta    b) gamma    c) alpha    d) delta



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**TIME : 2½ Hours**

**MAX.MARKS : 70**

**SECTION – B**  
**ANSWER ANY FIVE QUESTIONS**

**(5x6=30)**

1. How will you convert glucose into fructose and Arabinose into glucose?
2. Discuss keto- enol tautomerism with proof for two forms.
3. Explain aldol condensation and cannizaro reaction with mechanism.
4. Explain Hoffman and Satyzeff elimination with examples.
5. Give the synthesis of phenolic ketone and acrolein.
6. Give the mechanism for benzyne intermediate formation and give evidences.
7. Explain  $S_Ni$  mechanism with example.

**SECTION – C**  
**ANSWER ANY TWO QUESTIONS**

**(2x20=40)**

8. a) Explain the effect of solvent, structure of substrate, leaving group and nucleophilicity of the attacking reagent on  $S_N1$  and  $S_N2$  reactions.  
b) Discuss the structural elucidation of glucose with equations. (10+10)
9. a) Discuss the factors deciding the relative proportion of elimination and substitution products formed.  
b) Give the products
  - i) Propene +  $O_3 \rightarrow$
  - ii) Propene +  $B_2H_6 \rightarrow$
  - iii) Acetone +  $RMgBr \rightarrow$
  - iv) Acetone +  $Br_2 + NaOH \rightarrow$  (10+10)
10. Give the products with mechanism for the following reactions.
  - i) Knoevenegal reaction
  - ii) Epoxidation of alkene
  - iii) Peroxide effect
  - iv) Perkin reaction
  - v) Reformatsky reaction



