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

	OURSE : MAJOR CORE PER : ORGANIC CHEM	ISTRY-I					
TI	ME : 30 MINUTES		MAX.MARKS: 30				
		CTION – A	(30x1=30)				
ANSWER ON THE QUESTION PAPER ITSELF. Answer all the questions. I Choose the correct answer:							
	Glucose and fructose can be disting a) phenyl hydrazine b) hydrox		ater d) Fehling's solution				
2.	The diastereomers which differ in a) epimers b) anon	_					
3.	The reagent used in Wolff Kishne a) NH ₂ NH ₂ /NaOH b) Zn/C		OOH d) Al(t-OBu) ₃				
4.	Acrolein undergoes reduction with a) acrylic acid b) glyce		ehyde 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 c) glucose and fructose		b) glucose and glucosed) fructose and galactose				
7.	Aldehydes and ketones form hydra) oppenaur oxidation c) Claisen- Schmidt reaction	b) Baeyer	b) Baeyer Villeger reaction d) Clemmensen reduction				
8.	When 1.3-Butadiene reacts with HBr at high temperature the major product formed follows						
	a) 1,2 addition b) 1,4 a	ddition c) 2,3 ad	dition d) 1,3 addition				
9.	Starch is composed of a) amylose + amylopectin c) amylopectin+ inulin	,	e +cellulose pectin +cellobiose				
10.	In elimination two a) beta b) gammation two	groups depart from the contact and contact	same atom d) delta				

II Fill in the blanks:

11. In benzyne intermediate bond is present.
12. Benzaldehyde condenses with acetaldehyde in the presence of NaOH to form
13. When cellulose is dissolved in ether and alcohol, it forms a transparent film called
14. Both the carbon and oxygen of carbonyl group are hybridized.
15. Starch gives blue colour when treated with
16. Sugars having the same configuration as ofare designated as D-sugars.
17. Stereoisomers which are non superimposable mirror images of each other are called
18. The change in optical rotation of a solution of α or β forms of glucose until a constant value is obtained, is known as
19. In reaction, ketones on treatment with perbenzoic acid in the presence of acid
catalyst give esters.
20. In Reimer Tieman reaction, phenol reacts with chloroform and KOH to form
III State whether true or false.
21. A high concentration of nucleophile favours an S_N 2 reaction.
22. Carbenes are highly electrophilic in nature.
23. Maltose is composed of two D-glucose units joined by an glycosidic linkage between C-1
of one unit and C-4 of other unit.
24. Benzaldehyde condenses with NH ₃ whereas acetaldehyde gives addition reaction.
25. In benzion condensation, 2 moles of benzaldehyde reacts with NaOH to form benzoin.
IV Answer in a line or two:
26. What is gun cotton? Mention its use.
27. What is cis elimination?
28. What is α elimination?
29. State Markonihoff's rule.
30. What are reducing sugars?

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COURSE : MAJOR CORE

PAPER : ORGANIC CHEMISTRY-I

TIME : 2½ Hours MAX.MARKS : 70

SECTION – B (5x6=30) ANSWER ANY FIVE QUESTIONS

- 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_N i mechanism with example.

SECTION – C (2x20=40) ANSWER ANY TWO QUESTIONS

- 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 →
 - iv) Acetone + Br₂ +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