

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 2013
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. The conversion of alcohol to alkyl chloride using SOCl_2 follows _____ mechanism.
a) $\text{S}_{\text{N}}1$ b) $\text{S}_{\text{N}}2$ c) $\text{S}_{\text{N}}\text{i}$ d) all of these
2. Which one of the following substrates reacts faster by $\text{S}_{\text{N}}1$ mechanism?
a) primary b) secondary c) tertiary d) all of these
3. Addition of Br_2 to an alkene is _____ addition.
a) electrophilic b) nucleophilic c) free radical d) none of these
4. When HBr is added to iso-butene, it gives,
a) n-butyl bromide b) iso-butyl bromide
c) sec-butyl bromide d) ter-butyl bromide
5. The reaction between acetaldehyde and HCN is _____ addition.
a) electrophilic b) nucleophilic c) free radical d) concerted
6. Which one of the following does not undergo Cannizaro reaction?
a) HCHO b) CH_3CHO c) $\text{C}_6\text{H}_5\text{CHO}$ d) CCl_3CHO
7. The specific catalyst used in benzoin condensation is
a) $\text{C}_2\text{H}_5\text{O}$ b) HO c) NH_2 d) CN
8. The reagent used in haloform reaction is
a) halogen b) base
c) both halogen and base d) neither halogen nor base
9. The non-reducing sugar is
a) glucose b) fructose c) sucrose d) maltose
10. Maltose is a
a) monosaccharide b) disaccharide c) polysaccharide d) non-sugar

II Fill in the blanks:

11. The rate of _____ reaction is independent upon the nature of nucleophile.
12. Walden inversion takes place in _____ mechanism.
13. Hydrolysis of sucrose gives _____.
14. Glucose and fructose are _____ isomers.
15. Divalent carbon species are known as _____.
16. Alkaline KMnO_4 is known as _____ reagent.
17. The conversion of a ketone into an ester by using peracid is known as _____.
18. The reagent used in Wolff Kishner reduction is _____.
19. Cinnamaldehyde is prepared by _____ reaction.
20. Aromatic α -hydroxy ketone is known as _____.

III State whether true or false.

21. Benzyne is an intermediate formed in ozonolysis.
22. E_2 reaction is a stereo-specific reaction.
23. Carbonyl compounds are reduced to alcohols by Wolff Kishner reaction.
24. Acetophenone answers iodoform reaction.
25. Cellobiose is a polysaccharide.

IV Answer in a line or two:

26. Write the Haworth structure of sucrose.

27. Write one method of generation of benzyne.

28. What is alpha elimination?

29. What is an enantiomer?

30. What is Perkin's reaction?

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MAX.MARKS : 70

SECTION – B
ANSWER ANY FIVE QUESTIONS

(5x6=30)

1. Discuss the Keto-Enol tautomerism.
2. What are the factors that favour elimination over substitution? Explain.
3. a) What is mutarotation ? b) What is inversion of cane sugar ?
4. Write the mechanism of crossed cannizaro reaction.
5. How do you convert glucose into fructose and fructose into glucose?
6. What is Houben-Hoesch synthesis?
7. What is hydroboration? Discuss its mechanism.

SECTION – C
ANSWER ANY TWO QUESTIONS

(2x20=40)

8. a) Discuss the stereo-chemistry of S_N1 and S_N2 reactions. (10)
b) Explain anti-Markownikoff's rule with a suitable example. (5)
c) Explain Saytzeff's rule with an example. (5)
9. Write the mechanisms of the following
a) Claisen-Schmidt reaction b) Benzoin condensation
c) Reimer-Tiemann reaction d) Knoevenegal reaction. (4x5)
10. a) What are carbohydrates? How are they classified? (5)
b) How do you convert ribose into glucose? (3)
c) Compare the properties of starch and cellulose. (5)
d) How do you determine the ring structure of glucose? (7)



