

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) $\text{S}_{\text{N}}i$ 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)



