

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2004 –05 & thereafter)

SUBJECT CODE: CH/MC/OC34

B.Sc. DEGREE EXAMINATION, NOVEMBER 2008

BRANCH IV- CHEMISTRY

THIRD SEMESTER

REG.NO

COURSE : MAJOR CORE

PAPER : ORGANIC CHEMISTRY-I

TIME : 30 MINUTES

MAX.MARKS : 30

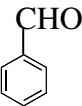
SECTION – A

(30x1=30)

ANSWER ON THE QUESTION PAPER ITSELF:

Answer all the questions:

I. Choose the correct answer:

- Amide used in Gabriel's synthesis
a) Formamide b) Acetamide c) Benzamide d) Pthalimide
- Phenol is less acidic than
a) Acetic acid b) p-methoxy Phenol c) Ethanol d) None
- Reimer Tiemann reaction is used for the preparation of
a) Salicylic acid b) Pthalic acid c) Benzoic acid d) Cinnamic acid
- a) :NH_2 b) OH c) :CH_3 d) $\text{C}_2\text{H}_5\text{O}^-$
- Benzoin is obtained by the reaction of benzaldehyde with
a) CH_3CN b) KCN c) HCN d) NH_2OH
- Which of the following does not undergo aldol condensation
a) HCHO b) CH_3CHO c) $\text{CH}_3\text{CH}_2\text{CHO}$ d) $\text{CH}_3 - \text{CO} - \text{CH}_3$
- The reaction of propanoic acid with Br_2/P is called
a) Kolbe's reaction b) HVZ reaction c) Hoffmann reaction d) None
- Addition of HBr to $\text{CH}_3 - \overset{\text{CH}_3}{\underset{|}{\text{C}}} = \text{CH}_2$ to give $\text{H}_3\text{C} - \overset{\text{CH}_3}{\underset{|}{\text{CH}}} - \text{CH}_2\text{Br}$ in presence of peroxide is due to
a) Markownikoff's rule b) Saytzeff rule c) Kramsch rule d) None
- Which of the following compounds will undergo self aldol condensation in the presence of cold dil alkali.
a) $\text{CH}_2 = \text{CH} - \text{CHO}$ b) $\text{CH}_2 = \text{CH} - \text{CHO}$ c)  d) $\text{CH}_3\text{CH}_2\text{CHO}$

10. Which of the following is the weaker acid?
- | | |
|----------------------------------------------------|---------------------------------------------------|
| a) $\text{H}_3\text{C} - \text{COOH}$ | b) $\text{CH}_3 - \text{CH}_2 - \text{COOH}$ |
| c) $(\text{H}_3\text{C})_2\text{CH} - \text{COOH}$ | d) $(\text{H}_3\text{C})_3\text{C} - \text{COOH}$ |

II. Fill in the blanks:

11. Maleic acid Fumaric acids are a pair of _____.
12. Formic acid does not undergo HVZ reaction because _____.
13. The reaction between phenol and CO_2 is called _____ reaction.
14. The reagent that distinguishes aldehydes and ketones is _____.
15. Malonic acid on heating at 415 – 455K gives _____.

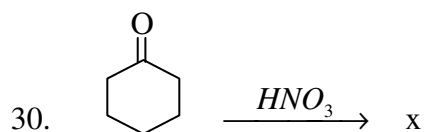
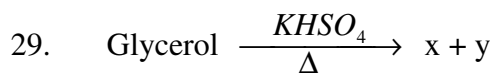
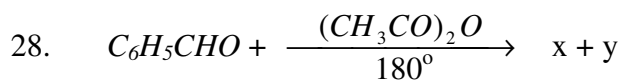
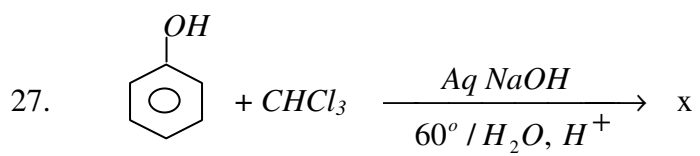
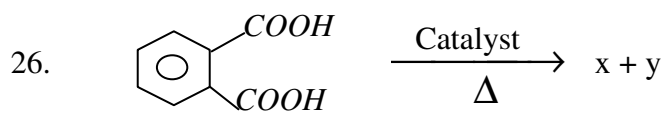
III. State true or false:

16. Kolbe's electrolysis of sodium salt of butanoic acid produces n-hexane at anode.
17. Phenol is not used as an antiseptic.
18. The condensation of phenol and Formaldehyde gives Bakelite.
19. Carboxylic acids exist as dimmers due to hydrogen bonding.
20. Aldehydes are sweet smelling while ketones are pungent smelling.

IV. Match the following:

- | | | |
|-------------------------------|---|------------------------------------|
| 21. HVZ reaction | - | Phenolic ketone |
| 22. Perkin's reaction | - | Chloroform |
| 23. Kolbe's reaction | - | Halo acids |
| 24. Haloform reaction | - | Higher alkanes |
| 25. Hovben – Hoesch synthesis | - | α, β , unsaturated acid |

V. Answer the following questions in one or two sentences:



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MAX.MARKS : 70

SECTION – B

Answer any five questions.

(5x6=30)

1. Explain Saytzeff and Hofmann Rule.
2. Explain SN^2 mechanism with example.
3. Describe Houben – Hoesch synthesis of phenolic ketone.
4. How will you convert acetic acid into propionic acid and vice versa?
5. Give the preparation of the following compounds.
a) Acrolein b) crotonaldehyde
6. Give any two methods of differentiating between Fumaric and Maleic acids.
7. What is the action of heat on the following:
a) Oxalic acid b) Malonic acid c) Pthalic acids

SECTION - C

Answer any two questions.

(2x20=40)

8. Write a notes on
 - i) Fries Rearrangement
 - ii) Catalytic hydrogenation
 - ii) 1,2 and 1,4 addition reactions of conjugated dienes.
 - iv) Condensation reactions of Monohydric phenols (any two).
9.
 - i) Explain the preparation and properties of cinnamic acid (10)
 - ii) What is HVZ reaction and explain reaction of KOH on $\alpha\beta\gamma$ – halogen substituted acids. (10)

10. i) How will you prepare Tryptophan from Indole. (5)
ii) Explain Gabriel's synthesis (5)
iii) Write a notes on Perkins reaction and Rosemond's reduction. (10)
11. Give the preparation of the following compounds.
i) a) Salicylaldehyde b) acetophenone c) Benzophenone (3+3+4)
ii) Describe the mechanism of Aldol condensation and cannizaro reactions. (5+5)

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