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(5th Semester)

CHEMISTRY

FIFTH PAPER (CHEM-351)

(Organic Chemistry—II)

Full Marks : 55

Time : 2½ hours

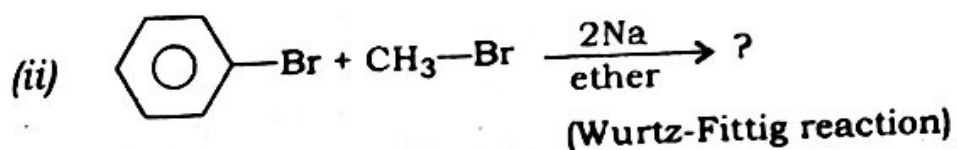
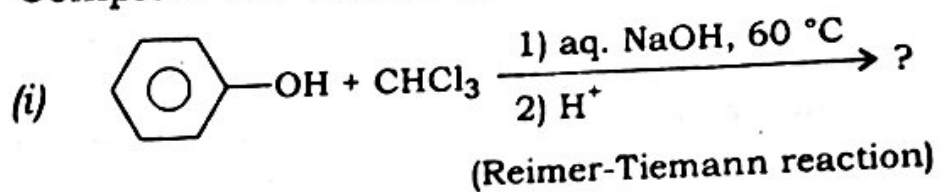
(PART : B—DESCRIPTIVE)

(Marks : 35)

*The figures in the margin indicate full marks
for the questions*

1. (a) Draw the MO picture of non-benzoid compound. 2

(b) Complete the following reactions : $2\frac{1}{2} + 2\frac{1}{2} = 5$

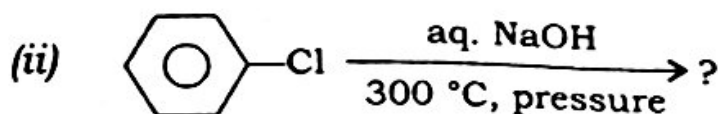
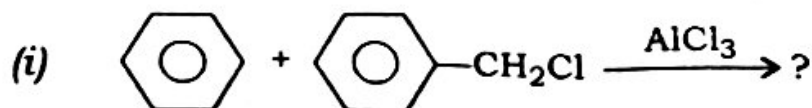


(2)

OR

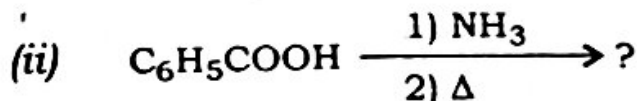
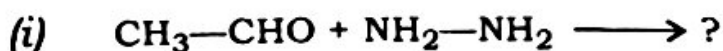
2. (a) Discuss the acidic character of phenol. 3

(b) Complete the following reactions : 2+2=4



3. (a) What is benzoin condensation? Discuss with mechanism. 3

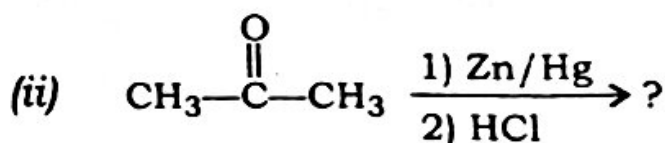
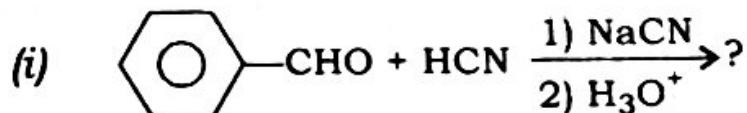
(b) Complete the following reactions : 2+2=4



OR

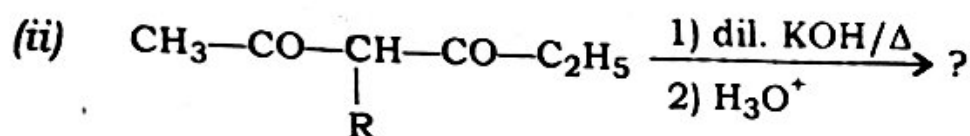
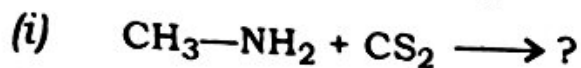
4. (a) Discuss in brief giving suitable example the effect of substituents on the acidity of carboxylic acid groups. 2

(b) Complete the following reactions : $2\frac{1}{2}+2\frac{1}{2}=5$



5. (a) Write the basic differences between tautomerism and resonance. 2

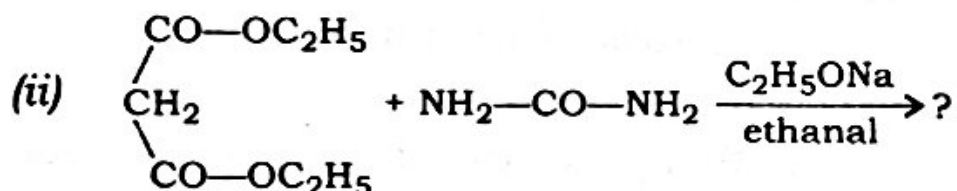
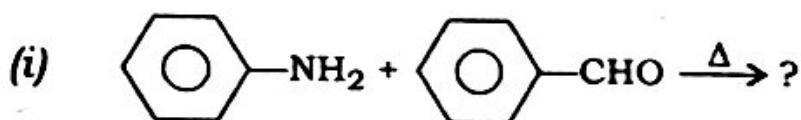
(b) Complete the following reactions : $2\frac{1}{2}+2\frac{1}{2}=5$



OR

6. (a) Discuss Hinsberg test for distinguishing 1° , 2° and 3° amines. 3

(b) Complete the following reactions : $2+2=4$



7. (a) Write short notes on the following : $2\frac{1}{2}+2\frac{1}{2}=5$

(i) Reformatsky reaction

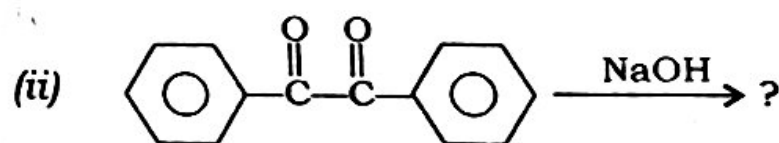
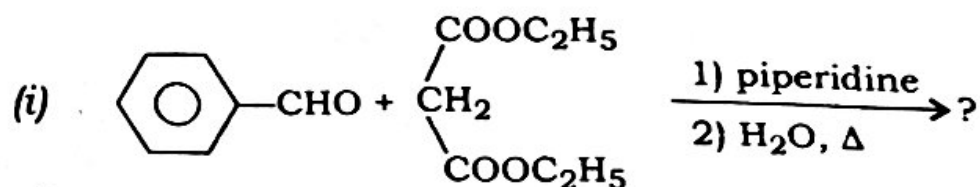
(ii) Wagner-Meerwein reaction

(b) What are acetals and ketals? Give one example of each. 2

(4)

OR

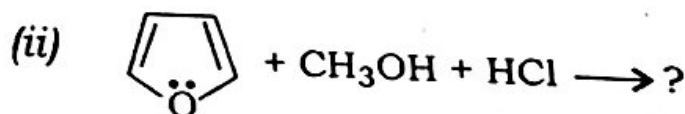
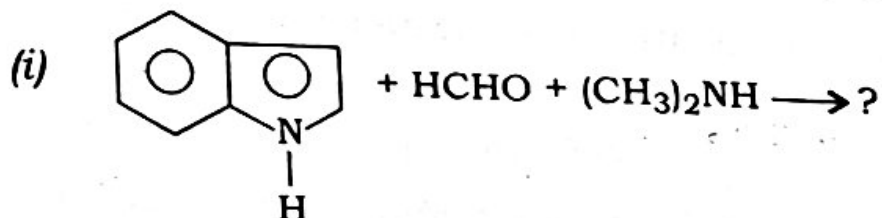
8. (a) Complete the following reactions with mechanisms : $2\frac{1}{2}+2\frac{1}{2}=5$



- (b) What are esters and amides? Give one example of each. 2

9. (a) Draw the resonance molecular orbital picture of thiophene. 2

- (b) Complete the following reactions with mechanism : $2\frac{1}{2}+2\frac{1}{2}=5$

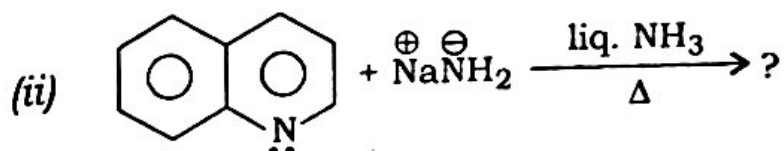
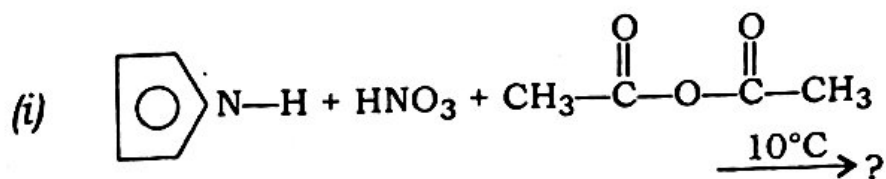


(5)

OR

10. (a) Discuss the structure of pyridine. 2

(b) Complete the following reactions with mechanism : $2\frac{1}{2}+2\frac{1}{2}=5$



2015

(5th Semester)

CHEMISTRY

FIFTH PAPER (Chem-351)

(Organic Chemistry—II)

(PART : A—OBJECTIVE)

(Marks : 20)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 5)

Put a Tick (✓) mark against the correct answer in the brackets provided : 1×5=5

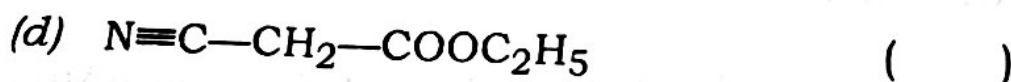
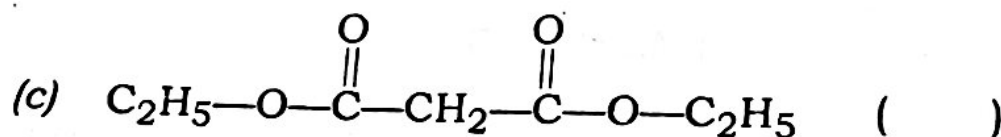
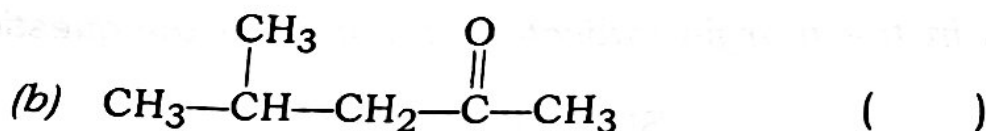
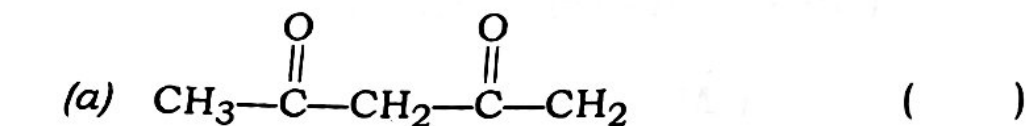
1. When phenol is substituted by electron withdrawing groups at para-position, the acidity

- (a) will be increased ()
- (b) will be decreased ()
- (c) will remain same ()
- (d) None of the above ()

2. Aldol condensation reaction can take place only in aldehydes and ketones having

- (a) α -hydrogen ()
 (b) β -hydrogen ()
 (c) γ -hydrogen ()
 (d) None of the above ()

3. Which of the following molecules does not consist of active methylene group?



4. Pinacol-pinacolone rearrangement is a rearrangement reaction of

- (a) diols to monoketone ()
 (b) diols to diketone ()
 (c) monoalcohol to monoketone ()
 (d) monoalcohol to diketone ()

(3)

5. In Skraup synthesis of quinoline, the reagents are

- (a) aniline and glycerol ()
- (b) phenyl hydrazine and pyruvic acid ()
- (c) cinnamaldehyde and hydroxylamine ()
- (d) None of the above ()

(4)

SECTION—II

(Marks : 15)

Answer the following questions in not more than
6 sentences each : 3×5=15

1. Write a short note on Huckel rule.

(5)

2. What is Perkin reaction? Write with mechanism.

(6)

3. Discuss with example, the effect of substituent on basicity of aromatic amines

V/CHEM (M)/134

(7)

4. Discuss Friedel-Craft acylation reaction with suitable example along with mechanism.

(8)

5. Discuss the comparative basicity of pyrrole/pyridine, pyrrole/pyrrolidine and pyridine/piperidine.

G16—350/134

V/CHEM (v)