

M.Sc. Part—I Semester-II (C.B.C.S. Scheme) Examination

CHEMISTRY (OLD) (UPTO WINTER-2018)

(Organic Chemistry—II)

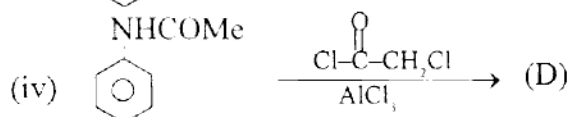
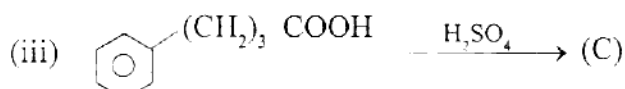
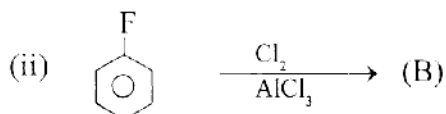
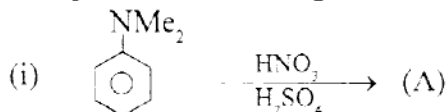
Paper—VI

Time : Three Hours]

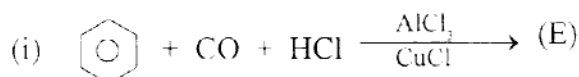
[Maximum Marks : 80

Note :— ALL questions are compulsory and carry equal marks.

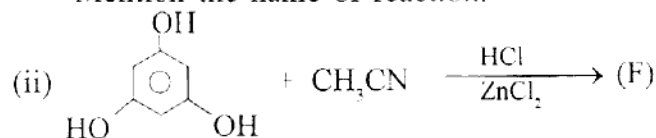
1. (a) Complete the following reactions, give the reason for orientation. 4



- (b) Explain the mechanism of following reactions : 8



Mention the name of reaction.

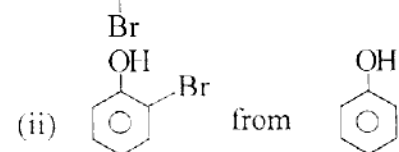
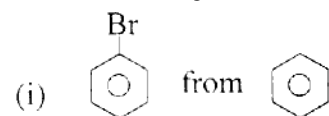


- (c) Write in brief on diazonium coupling. 4

OR

- (p) Explain why the bromination of toluene is five times faster than that of t-butyl benzene. 4

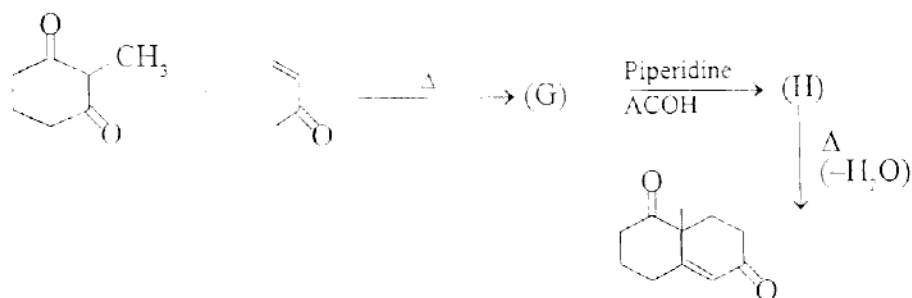
- (q) Provide the synthesis of the following compounds : 6



- (r) Write in brief on arenium ion mechanism. Also give the evidences in favour of it in detail.

2. (a) Explain the mechanism of following reaction :

6

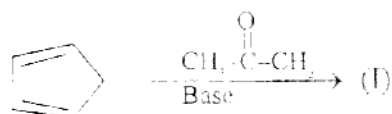


(b) Explain the mechanism of hydrolysis of (i) Amide, (ii) Ester by giving suitable examples.

6

(c) Discuss the mechanism of following reaction :

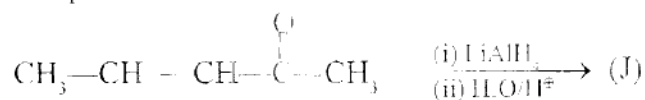
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OR

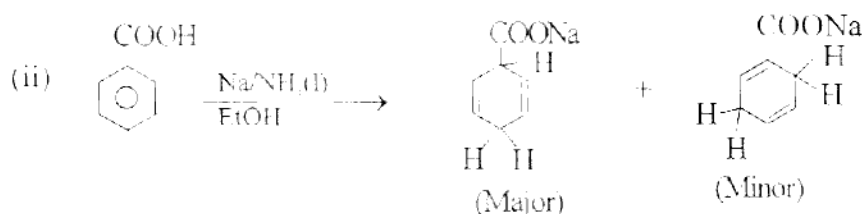
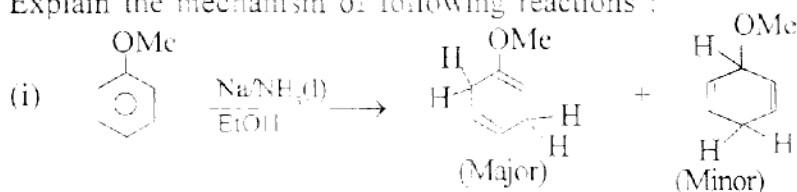
(p) Complete the reaction. Give the mechanism.

4



(q) Explain the mechanism of following reactions :

6



(r) Write the addition reactions of cyclopropane with different proposed mechanisms.

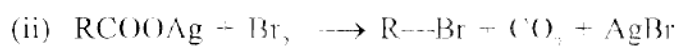
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3. (a) Ethoxymethyl chloride reacts with nucleophiles 10^6 times faster than 1-chlorobutane. Explain.

4

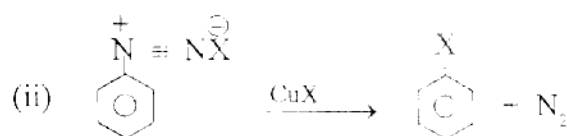
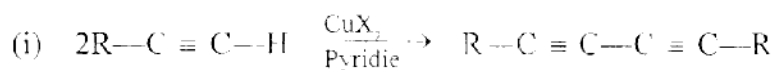
(b) Explain the mechanisms of following reactions :

6



(c) Give the mechanisms of following coupling reactions :

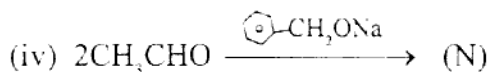
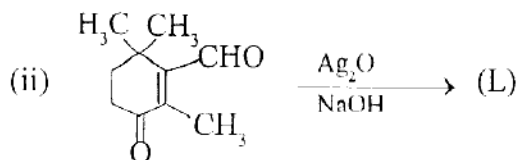
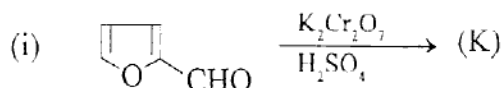
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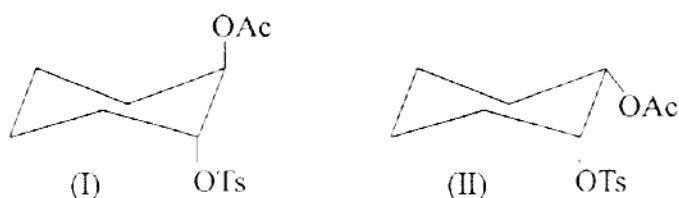
(p) Give the product of following reactions :

4



(q) Explain why the trans isomer (I) undergoes dectolysis 670 times faster than the cis-isomer (II), and that the product has the same (cis) stereochemistry in both the cases.

6

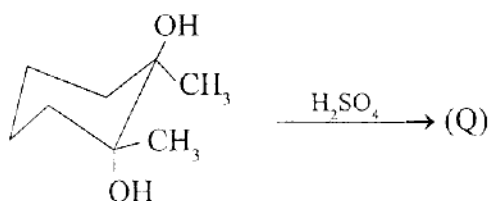
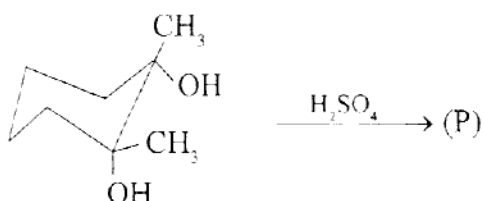


(r) Explain the free radical mechanism of halogenation of alkyl and allylic carbon with examples.

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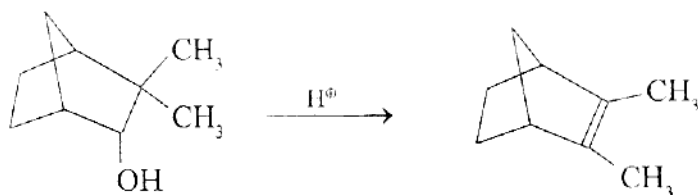
4. (a) Identify the products of reactions and explain their mechanism also.

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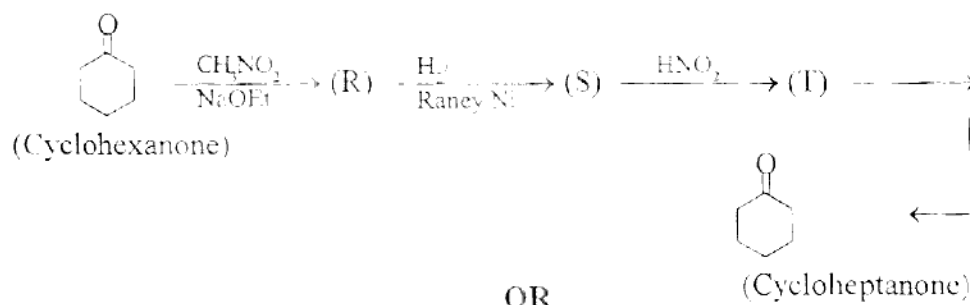
(b) Explain the formation of product with proper mechanism.

4



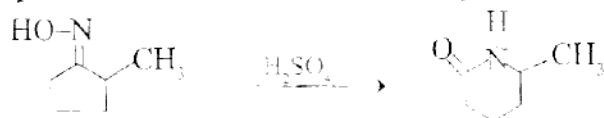
(c) Complete the following set of reaction with proper mechanism.

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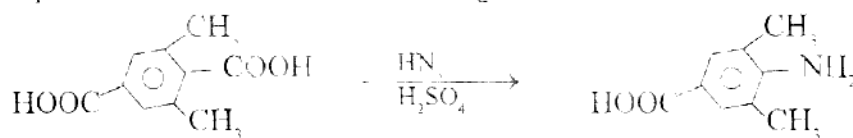
(p) Explain the mechanism of following reaction.

5



(q) Explain the mechanism of following reaction.

6



(r) Explain with proper mechanism---Favorski rearrangement.

5

5. (a) Explain twelve principles of 'Green Chemistry'.

6

(b) Discuss the green synthesis of (i) Paracetamol and (ii) Ibuprofen.

6

(c) What is atom economy ? Calculate the atom economy in following reaction.

4



OR

(p) Explain the synthesis of (i) Styrene and (ii) Urethane by the green route of synthesis.

6

(q) What are ionic liquids ? Explain with examples.

6

(r) Explain the green method for the bromination of aromatic ring.

4