

AU-314

M.Sc. (Part—I) Semester—II (CBCS Scheme) Examination
CHEMISTRY (Old) (Upto Winter-2018)
(Organic Chemistry—II)
Paper—VI

Time : Three Hours]

[Maximum Marks : 80

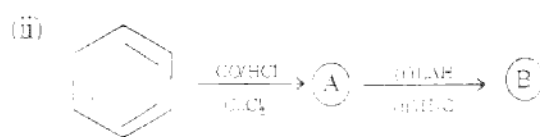
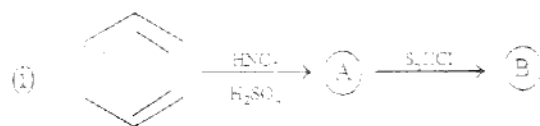
N.B. :— All questions are compulsory and carry equal marks.

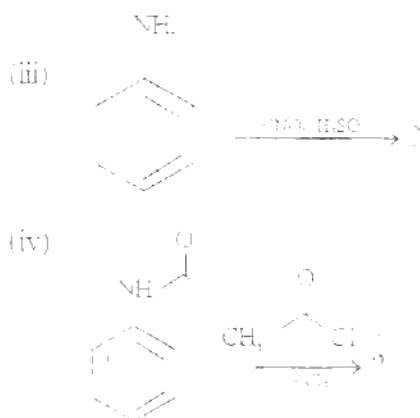
UNIT—I

1. (a) Toluene on Friedal Craft's acylation yields mainly the para acyl derivative. How can you obtain ortho derivative in high yield ? Explain with mechanism. 4
- (b) Arrange the following compounds in order of increasing tendency to undergo electrophilic substitution reaction and why ?
 - (i) Nitrobenzene
 - (ii) Benzene
 - (iii) Phenol
 - (iv) Toluene. 4
- (c) Write in brief on following with mechanism :
 - (i) Gatterman Koch
 - (ii) Houben-hoesch reaction. 8

OR

- (p) Why biphenyl is ortho para-directing ? Explain. 4
- (q) Predict the product for following reaction :



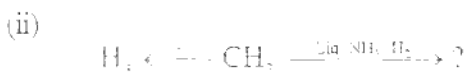


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- (r) Give an account of ipso attack with suitable examples. 3
- (s) Explain the reactivity of monosubstituted benzene on the basis of EDG and EWG with suitable example. 3

UNIT—II

2. (a) Explain the stereochemistry of addition of hydrogen molecule to propene with mechanism. 4
- (b) Predict the product with mechanism :



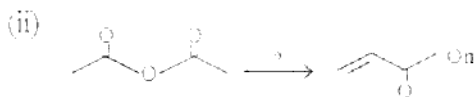
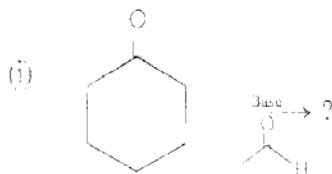
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- (c) Explain the mechanism of acid hydrolysis of ester. 3
- (d) Why during addition of HBr to Vinyl Bromide the addition is slower than ethylene but in regioselectivity it is similar to propylene ? 3

OR

- (p) How ICl will add to $\text{Me}_2\text{C}=\text{CH}_2$? 4
- (q) Explain the Reformatsky reaction with suitable example. 6

(r) Complete reaction with mechanism :



(s) What happens when cyclohexanone is treated with base ?

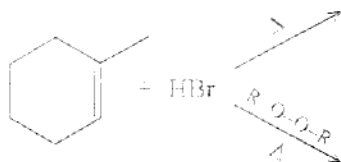
UNIT-III

3. (a) Write the mechanism of the following reaction :



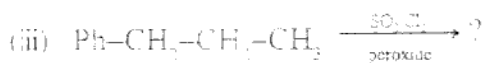
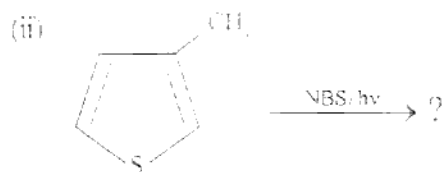
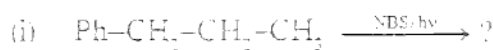
(b) Explain in detail about Sandmeyer reaction.

(c) Explain the following observation and predict the product.



OR

(p) Predict the product for following reaction :



(q) What is Fenton's reagent and give its reactions ?

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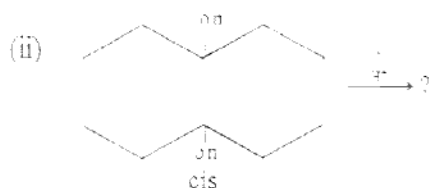
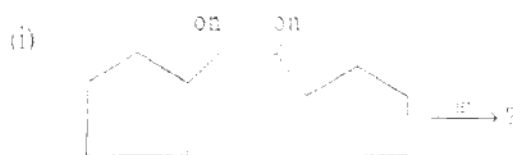
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(r) Predict the product :



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(s) What is Favorskii Rearrangement ? Explain with suitable examples.

3

UNIT-V

5. (a) What are the basic principles of Green Chemistry ? 6

(b) How will you synthesize the following by using the principles of green chemistry ?

(i) Paracetamol and

(ii) Free radical bromination.

6

(c) How will you minimize the formation of Hazardous products ?

4

OR

(p) Write in brief :

(i) Choice of the starting material.

(ii) Choice of the solvent.

6

(q) Which are the reactions having hundred percent (100 %) atom economy ? Explain with suitable examples.

4

(r) Which precautions you will take to design safer chemicals ?

3

(s) Nowadays which are the green chemistry methods employed for the synthesis ? Explain with examples.

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