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Reg. No. 

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IV Semester M.Sc. Degree Examination, September /October - 2022

CHEMISTRY

Industrial Organic Chemistry

(CBCS Scheme 2019-20)

Paper : CH - 403-OC

Time : 3 Hours

Maximum Marks : 70

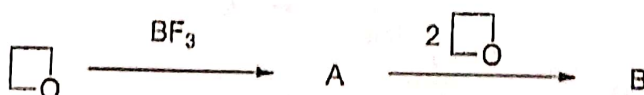
*Instructions to Candidates:*

Answer question No.1 and any five of the remaining.

Answer any ten of the following:

(10×2=20)

1. a) Explain any two methods of applying dyes to fabrics.
- b) Write any two reactions of benzo[b]furan
- c) Explain the role of organotelluriums in the synthesis of biaryls .
- d) Illustrate hydroalumination and carboalumination of alkenes with an examples.
- e) Write any two synthesis of six membered heterocyclic ring containing bismuth.
- f) Explain any two role of polymers in adhesives.
- g) Write the molecular structure of sensitol red and explain its role as cellular uptake in biological studies.
- h) Write the isomeric structures of diazepines.
- i) Write a note on the classification of natural and synthetic polymers.
- j) Identify A and B in the following reaction:

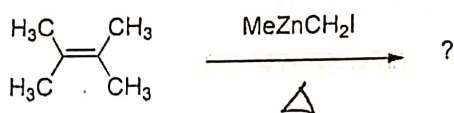


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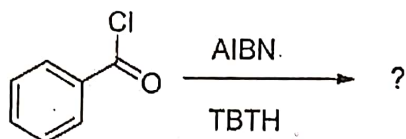


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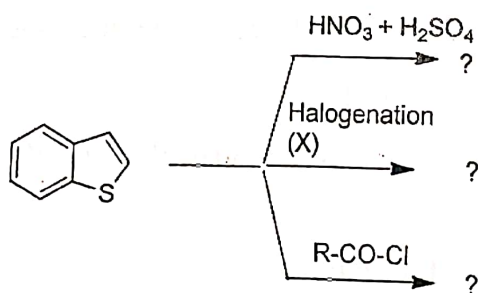
- k) Explain the degree of polymerization calculations.  
 l) Predict the product with mechanism:



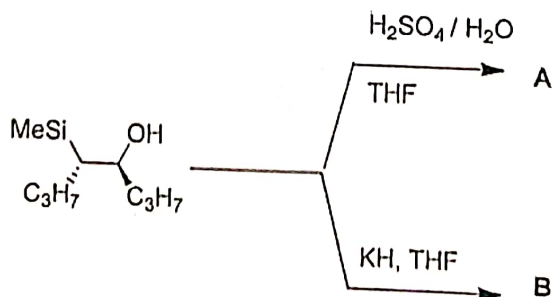
2. a) Write the synthesis of Malachite green and explain its applications.  
 b) Outline any two method of synthesis of 1,4-diazine.  
 c) Complete the following reaction and discuss its mechanism (4+3+3=10)



3. a) Formulate the synthesis, properties and applications polymethyl methacrylates.  
 b) Identify the products in the following reactions:



- c) Describe Barton-McCombie deoxygenation reaction with mechanism. (4+3+3=10)  
 4. a) Identify the product(s) A and B, and briefly outline its mechanism.

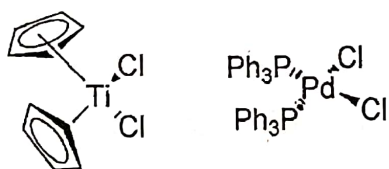




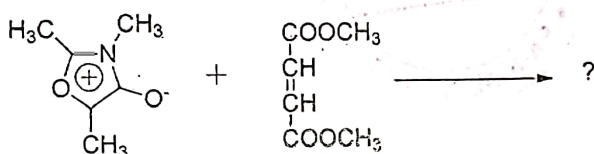
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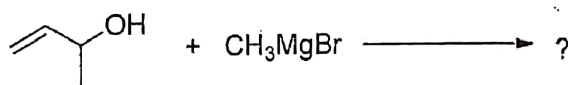
- b) Write a note on Gilman reagents. Give examples for its use in organic synthesis.  
 c) Describe any two syntheses of azepanes. (4+3+3=10)
5. a) Calculate the EAN value for the following complexes:



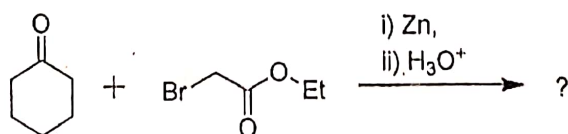
- b) Briefly describe bulk polymerizations with suitable examples.  
 c) Guess the product formation in the following reaction and propose a suitable mechanism: (4+3+3=10)



6. a) Sketch the synthesis of arsole and phosphole.  
 b) Outline the synthesis of Rhodamine-B.  
 c) Identify the product in the following reaction with mechanism. (4+3+3=10)



7. a) Complete the following reaction with mechanism:



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- b) Outline the synthesis, and uses of Phenol-formaldehyde resin. Indicate the common name of the product.
- c) Highlight the syntheses of 1,3-diazolium-4-olates with mechanism. (4+3+3=10)
8. a) Write the application of dyes in the following:
- i) Photography.
- ii) Electronics.
- b) Describe the synthesis of 2-methoxyazocine starting from cyclohexa-1-4-diene.
- c) Explain solvomercuration - demercuration reactions with suitable examples. (4+3+3=10)

