Registration No.: | | | | | | | | | | |

Total Number of Pages: 02 **Course: M.Sc.I**

Sub_Code: FCYC901

9th Semester Regular Examination: 2024-25

SUBJECT: Organic chemistry VII

BRANCH(S): M.Sc.I(AC)

Time: 3 Hours

Max Marks: 70

Q.Code: R013

Answer Question No.1 (Part-I) which is compulsory, any five from rest (Part-II)

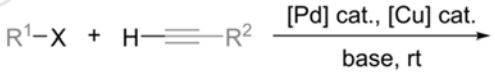
The figures in the right hand margin indicate marks.

Part-I

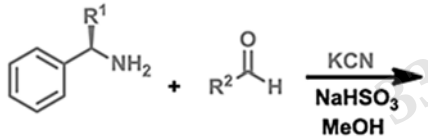
Q1 **Answer the following questions:** **(2 x 10)**

a) Write any two important principles of green chemistry.

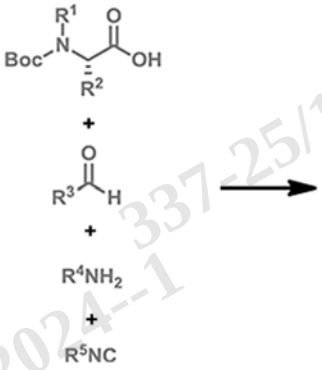
b) Find the product of the reaction:



c) Find the product:



d) Find the product:



e) What is the role of protecting group in chemoselectivity in a chemical reaction? Name some common protecting groups for alcohol.

f) How is the selection of a proper reagent important in chemoselectivity? Use the example of selective reduction of cyclopent-2-enone to justify the answer.

g) Define Asymmetric desymmetrization with example.

h) What is Cram's rule?

i) Write the uses of Rapamycin.

j) Give the structural overview of Endiandric acid.

Part-II

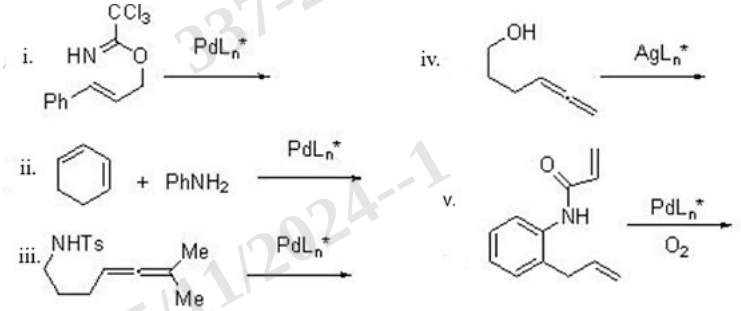
Long Answer Type Questions (Answer Any five)

Q2 **a)** Explain atom economy in green chemistry with a suitable example **(5+5)**

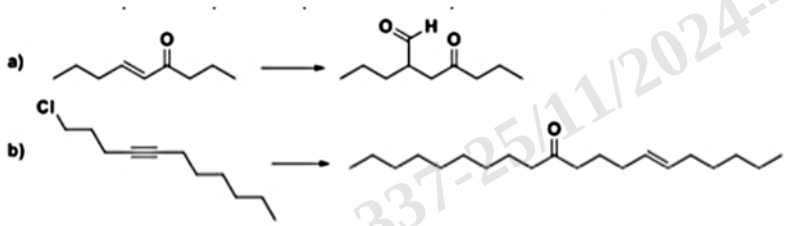
b) What is a Multi-component Reaction? List and define the classification of schemes of MCRs.

Q3 Write a short note on Suzuki reaction. **(5+5)**

Write the product of the reactions:



Q4 Show how each of the following compounds can be prepared from the given starting material using either a formyl or an acyl anion equivalent in the synthetic scheme. **(5+5)**



Q5 **a)** Write a note on stereoselectivity using suitable examples. **(5+5)**

b) Discuss the Flekin-Anh model for the addition of nucleophiles to carbonyl compounds.

Q6 **a)** Define a chiral auxiliary. Show the conversion of pyruvic acid to lactic acid using a suitable chiral auxiliary. **(5+5)**

b) What are boron enolates? Discuss its use in diastereoselective Aldol condensation.

Q7 What is Taxol? Discuss the synthetic challenges and the total synthesis of Taxol. **(10)**

Q8 **a)** What are prostaglandins? Write a brief note on the chemical structure and classification of these compounds. **(5+5)**

b) Write the biosynthesis of prostaglandins.