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

Total Number of Pages: 01 **Course: M.Sc.I**

Sub_Code: FCYF908

9th Semester Regular Examination: 2024-25

SUBJECT: Synthesis of Fine Chemicals

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

Time: 3 Hours

Max Marks: 70

Q.Code: R221

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) Name two industrial gases and their uses.

b) What are the hazards of handling phosgene gas?

c) Define fractionation in petroleum products.

d) Give two applications of potassium dichromate.

e) What is the role of Tetrahydrofuran in fine chemical synthesis?

f) Write two examples of organometallic reagents.

g) Explain the importance of Aspartame as an artificial sweetener.

h) List two applications of Grignard reagents in organic synthesis.

i) What are the main components of antiulcerants?

j) Mention any two cardiovascular drugs.

Part-II

Long Answer Type Questions (Answer Any five)

Q2 **a)** Discuss the large-scale production and storage of hydrogen gas. **(5+5)**

b) Explain the industrial uses and handling precautions of neon gas.

Q3 **a)** Describe the manufacturing process of sulphuric acid. **(5+5)**

b) What are the industrial applications of borax and its hazards?

Q4 **a)** Write a detailed note on the synthesis of chloroform. **(5+5)**

b) Explain the fractionation process in petroleum refining.

Q5 **a)** Discuss the synthesis and applications of organo-lithium reagents. **(5+5)**

b) Describe the synthesis of Grignard reagents.

Q6 **a)** Provide a detailed synthesis process for riboflavin. **(5+5)**

b) Explain the steps in the synthesis of Aspartame.

Q7 **a)** Discuss the eco-friendly synthesis techniques in fine chemical manufacturing. **(5+5)**

b) Describe any two green chemistry practices in solvent synthesis.

Q8 **a)** Explain the manufacturing of nitric acid and its industrial significance. **(5+5)**

b) What are the hazards of handling and storing chlorine gas?