Ref. No.: Ex/MPC102T/2024

M. PHARMACY FIRST YEAR FIRST SEMESTER EXAM 2024

SUBJECT: ADVANCED ORGANIC CHEMISTRY -1, Full Marks 75

Answer any five by taking at least one from each Group

Group A

1. Write principle of the following name reaction (**any five**) [5x3]

a) Ozonolysis reaction b) Ugi Reaction c) Mannich Reaction

d) Baeyer-Villiger oxidation e) Dieckmann Reaction f) Doebner-Miller reaction

2. Write principle, mechanism and applications of the following name reaction (**any one**) [15]

a) Ullmann-Coupling Reaction b) Sandmeyer Reaction.

3. Answer the following question (**Any three**) [3x5]

a) Skraup Quinoline Synthesis b) Fischer Indole Synthesis

c) Paal-Knorr Synthesis of Pyrrole d) Hantzsch pyridine synthesis e) Carbenes and Nitrenes

4. a) Explain why Pyridine is more basic than pyrrole but less basic than aliphatic amines. [5]

b) Furfural undergoes different types of condensation reaction. What are these reaction? Discuss properly. [5]

c) Pyrrole undergoes electrophilic substitution reaction at 2^{nd} position. Why? [5]

Group B

5. Justify the statement "Protecting groups: a necessary evil". Discuss the different strategies of protecting groups in case of alcohol with examples. Write carbamate strategy of protecting NH group. [3+9+3]

6. Write the synthesis and application of (**Any three**) [3x5]

(a) Aluminiumisopropoxide (b) dicyclohexylcarbodimide (c) Osmimum tetroxide (d) Triphenylphsophine

Group C

7. (a) Discuss "Grignard reagent as a versatile synthon" (b) How retrosynthesis helps for "total synthesis of tropine"? [8+7]

8. Discuss "Retrosynthesis of alcohols using an organometallic reagent" showing planning of a Grignard synthesis [8+7]