[KC 707] **Sub. Code : 4182**

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper II — ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Time : Three hours — Maximum : 90 marks

Two and a half hours for Sec. A & Sec. B. — Sec. A & Sec. B : 60 marks; Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. What are heterocyclic compounds? How are they numbered? Give a brief account of Furan synthesis by various routes.

2. Write notes on :

(a) Hantzsch Pyrrole synthesis.

(b) Knorr Pyrrole synthesis.

(c) Pyrrole via acetylene dicarboxylic acid route.

(d) Chemical reactions of Furan.

(4 + 4 + 4 + 3 = 15)

3. (a) Define and classify with examples the term 'polynuclear hydrocarbons'.

(b) Give physico–chemical evidences based on which the structure of naphthalene was established.

(c) Show with equations, the steps for synthesizing the following (any TWO) :

(i) Decalin from benzene.

(ii) 1–Methylnaphthalene from benzene.

(iii) β –Naphthoic acid from tetralin.

(2 + 10 + 3 = 15)

4. (a) An acid of the formula $C_5H_{10}O_2$ is optically active. What is its structure? (7)

(b) How many optically active forms corresponding to the following formulas are possible? Write their structures. (8)

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Give one example of medicinally important compound from each of the following series : Triphenyl methane, Anthracene, Phenanthrene, Naphthalene and Diphenylmethane. Write their structure and uses.

6. Write notes on :

   (a) Walden Inversion.

   (b) Meerwin–Pondroff reduction.

7. Write products of this following reactions stating their conditions:

   (a) Piperidine $\xrightarrow{\text{(Oxidation)}}$

   (b) Pyridine + SO_2Cl_2 $\longrightarrow$

   (c) Pyridine + $NaNH_2$ $\longrightarrow$

   (d) Piperidine + Methylphenylether $\longrightarrow$

   (e) Pyridine–1–oxide + Acetic anhydride $\longrightarrow$

8. Write short notes on :

   (a) Catalytic hydrogenation.

   (b) Beckmann rearrangement.

9. Give the synthesis of :

   (a) Quinoline (Skranp's method).

   (b) Fischer's indole synthesis.

10. Write structures and uses of :

   (a) Phenergan.

   (b) Chinioform.

   (c) Nikethamide.

   (d) Mepacrine.

   (e) Mepyramine.

11. Give an account of the basicity of heterocyclic compounds containing one nitrogen atom.

12. What are products when furan and thiophen are subjected to

   (a) the Friedal–Crafts reaction.

   (b) the Diels–Alder reaction.

13. Enumerate briefly Geometrical Isomerism.
