

SHREE H.N. SHUKLA GROUP OF COLLEGES

(AFFILIATED TO SAURASHTRA UNIVERSITY & GTU)



2-vaishali nagar, Near
Amrapali railway
crossing,
Raiya road, Rajkot-
360001. Ph.No.-
(0281)2440478, 2472590

3-vaishali nagar, Near
Amrapali railway
crossing,
Raiya road, Rajkot-
360001. Ph.No.-
(0281)2471645

Behind marketing yard,
Near Lalpari lake,
Between Amargadh-
Bhichri, Rajkot-360002.
Ph.No.-90990 63150

M. Sc. SEMESTER-III

ORGANIC-PHARMACEUTICAL CHEMISTRY

C(OP)-303 : HETEROCYCLIC CHEMISTRY

1. Nomenclature of Heterocyclic Compounds

Introduction, Hantzsch-Widman nomenclature for monocyclic, fused and bridged heterocycles.

2. Three and four membered heterocycles

Preparation and properties of aziridine, azirane, oxirane, thiirane.

Preparation and properties of diazirane and oxaziridine.

Preparation and properties of azetidine, oxetane, thietane.

3. Five-membered Heterocycles

Preparation and properties of pyrazole, imidazole, oxazole, thiazole.

Preparation of isoxazole, oxazole, isothiazole, isothiazole.

Preparation and properties of indole, benzofuran, thianaphthene.

Preparation of isoindole, indolizine, dibenzofuran, isobenzofurans, carbazole.

Preparation and properties of triazole and tetrazole.

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4. Six-membered Heterocycles

Preparation and properties of pyridine, pyran, pyrimidine, pyridazine and pyrazine.

Preparation of 2-pyrones and 4-pyrones.

Preparation and properties of quinoline, isoquinoline, acridine, phenanthridine, quinazoline, quinoxaline and cinnoline.

Preparation of benzopyran, benzo-2-pyrones and benzo-4-pyrone.

5. Seven and Eight Membered Heterocycle

Synthesis of azepine, thiepine, diazepine.

Synthesis of azocine, 1,4-diazocine, 1,4-dioxocin, 1,4-dithicine.

Reference Books

1. Heterocyclic Chemistry-R.K. Bansal.
2. An introduction to the Chemistry of Heterocyclic Compounds - R.H.Acheson.
3. Chemistry of Heterocyclic compounds-J.J. Trivedi
4. Heterocyclic Chemistry-R.R. Gupta, M.Kumar and V. Gupta, Springer.
5. The Chemistry of Heterocycles - T. Eicher and S. Hauptmann.

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6. Heterocyclic chemistry - J.A. Joule, K. Mills & G.F. Smith.
7. Comprehensive Heterocyclic Chemistry - A. R. Katritzky and C. W. Rees
8. Heterocyclic Chemistry - T. L. Gilchrist.
9. The Essence of Heterocyclic Chemistry, New Age International Publications, 2013.