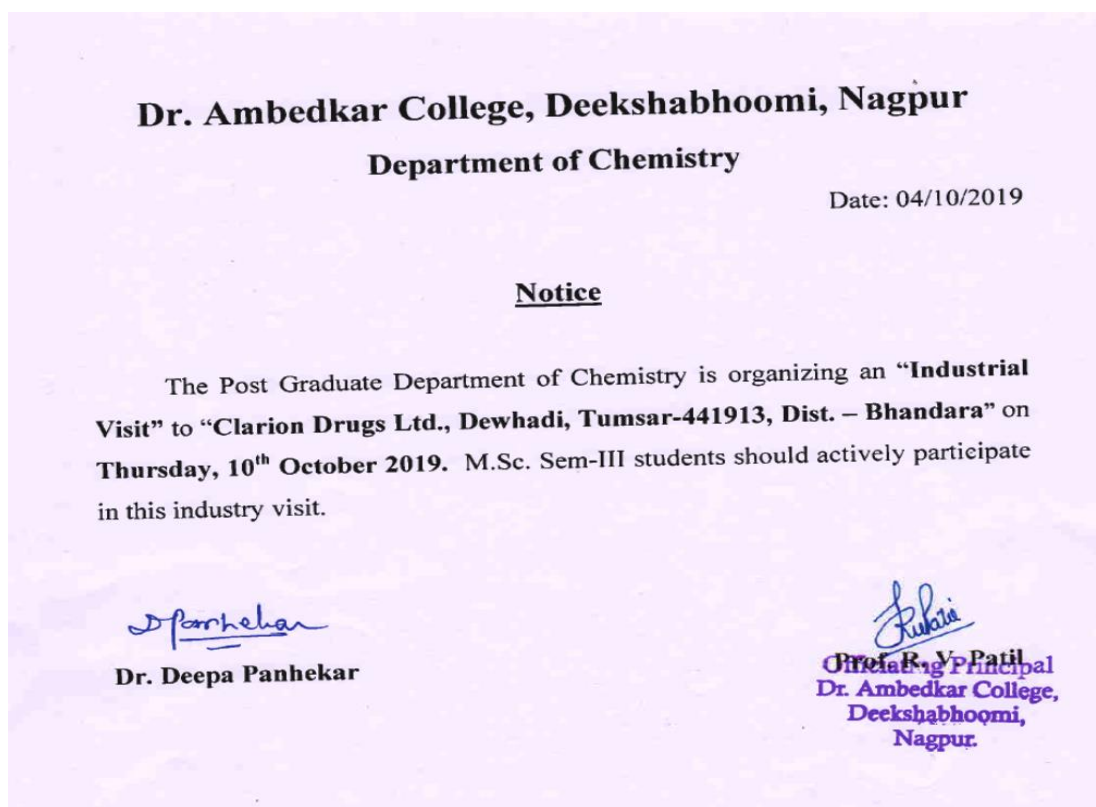


DR. AMBEDKAR COLLEGE, DEEKSHABHOOMI, NAGPUR

DEPARTMENT OF CHEMISTRY

Academic visit to
Clarion Drugs Ltd, Dewhadi, Tumsar

Date of Visit: 10th October 2019



REPORT

An academic visit to **Clarion Drugs Ltd, Dewhadi, Tumsar** was organized for M Sc Chemistry students on 10/10/2019.

Purpose of the Visit :

- To discuss with the chemists on the aspects of chemical synthesis and their analysis.
- To understand the working of state of the art instruments being used for chemical synthesis.
- To understand the opportunities available in various laboratories and pharmaceutical companies like Clarion Drugs Ltd; for the students completing post-graduation in Chemistry.
- To understand overall working of pharmaceutical industry.

About Clarion Drugs Ltd, Dewhadi :

The plant is located in the central part of India at Bhandara, Maharashtra & it is 89 Kms from Nagpur. The plant has a capacity to produce large amount of high quality chemical intermediates which are used in the preparation of various drugs with medicinal and therapeutic importance and perfumery products.

Clarion Drugs Ltd, Dewhadi is the manufacturer of pharmaceutical intermediates and fine chemicals in India. It is a multi-process plant which performs a wide range of reactions involving preparation of intermediates for the international pharmaceutical and perfumery industries; equipped with a state of art machinery.

The chemical intermediates which are synthesized in this industry include:

- Phenyl benzophenone
- 3-bromo acetophenone
- 3-nitro acetophenone
- 3-methoxy acetophenone
- 3-hydroxy acetophenone
- 3-acetamide acetophenone

The visit started with the introduction of Clarion Drugs Ltd at the industry premise on 02.30 pm which was given by Mr. A K Berar, Chief Manager, Clarion Drugs Ltd., Dewhadi. He provided the information of all the instrumentation processes, their working principle and preparation processes by explaining at their respective instrumentation site.

The main processes at the plant are:

- **Formulation and pre-formulation development:**
 - i. Powder feeding in continuous manufacturing feeder
 - ii. Powder blending
 - iii. Powder milling
 - iv. Granulation and
 - v. Hot melt extrusion

He explained the functioning of this Unit. He also warned the students how to reach a safe assembly point if any accident happens in the unit during visit.



He gave information about the various chemical reactions which are generally performed at Clarion. The major advantages at Clarion are having a 75 TR brine chilling plant with temperature below -35°C and thermic fluid heater with maximum temperature of $+250^{\circ}\text{C}$.

Reaction conditions for following reactions were explained;

1. Nitration and Sulphonation
2. Reduction (Catalytic and metal)
3. Hydrogenation and halogenation
4. Friedel – Crafts reactions and methylation
5. Aldol condensation and Grignard Reactions
6. Suzuki coupling
7. Vilsmeier – Haack reactions and many more.

During this session, students interacted with Mr. A K Berar particularly about the chemicals used in such drug intermediate preparation.

After this students visited the Chemical Laboratory and R&D unit of the plant, where various tests were performed in the testing Laboratory.

This visit was highly useful for the students in terms of practical knowledge about the preparation, processing and analysis of chemical intermediates and pharmaceutical drugs and will also be helpful for students to find placement opportunities in such industries. A batch of 22 students were accompanied by Dr. Ratnadeep Sawant, Mr. Parag Panse, Ms. Pooja Rahate and Mr. Umesh Patil. Dr. Deepa Panhekar, Head, Dept. of Chemistry organized the visit. Dr. Chetan Masram, Principal, S. N. Mor College Tumsar at Clarion Drugs Ltd, Dewhadi, Tumsar took efforts in organizing the visit.



PG Students and Faculty members of DACN