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Raffles University Neemrana, established by an Act of Rajasthan State Legislature, as per Section 2 (f) of UGC Act 1956, situated in NCR at: Neemrana on Delhi Jaipur Highway No. 4

2.2.1

The institution assesses the learning levels of the students and organizes special Programmes to cater to differential learning needs of the student

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Guest lecture organized

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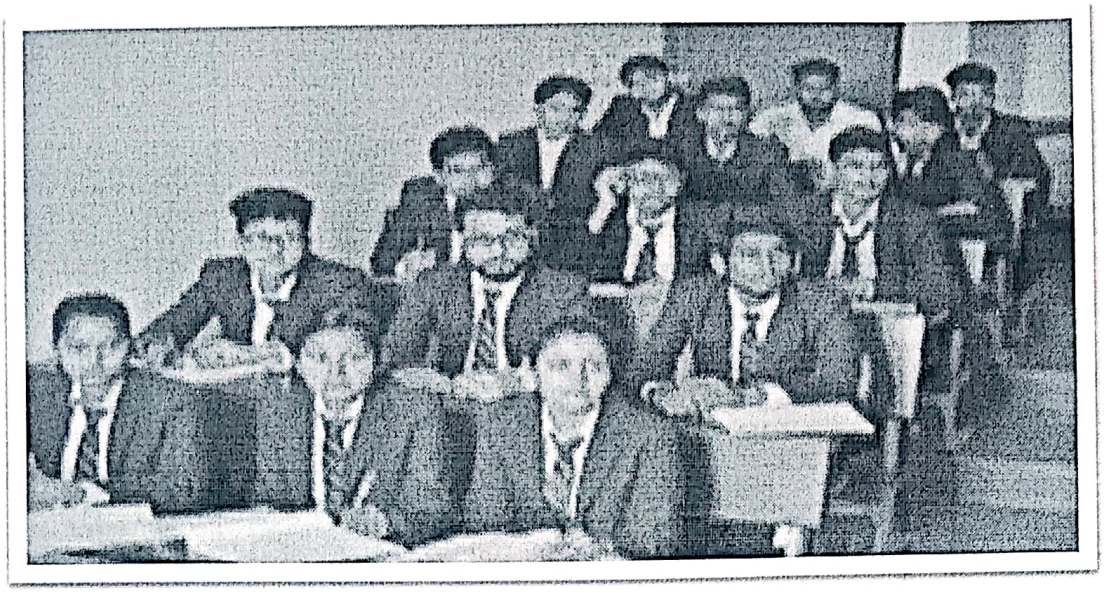

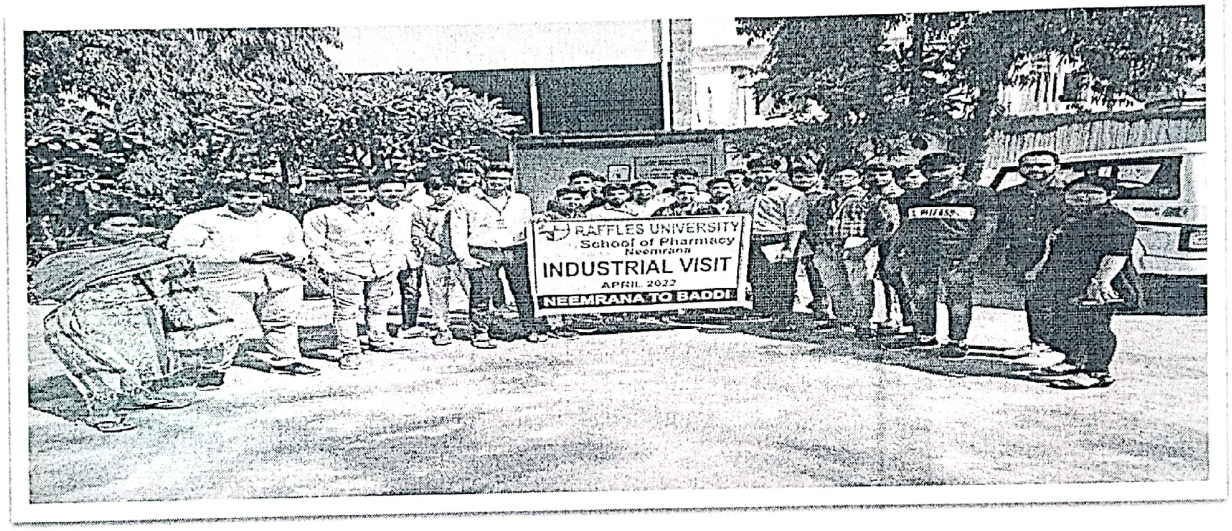

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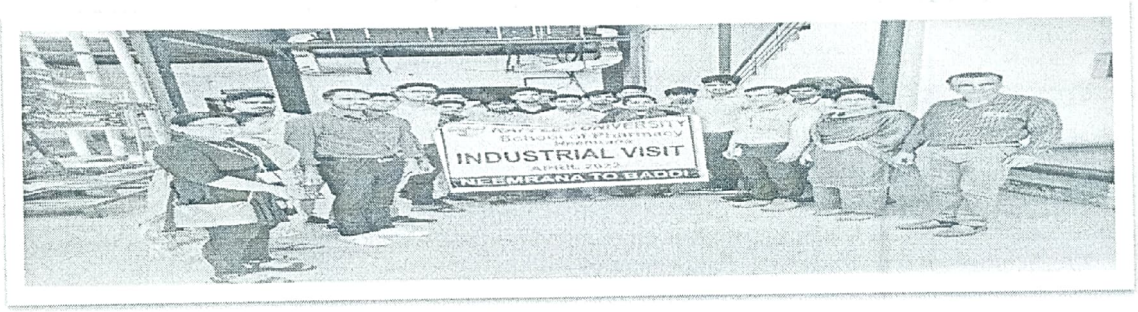

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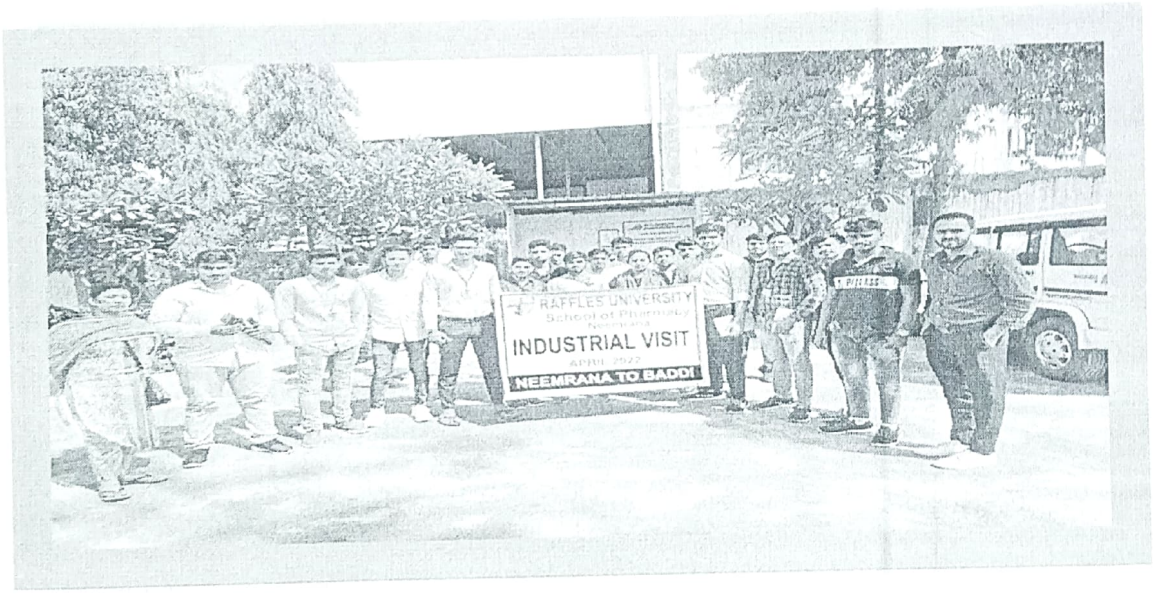

Learning through Experimental

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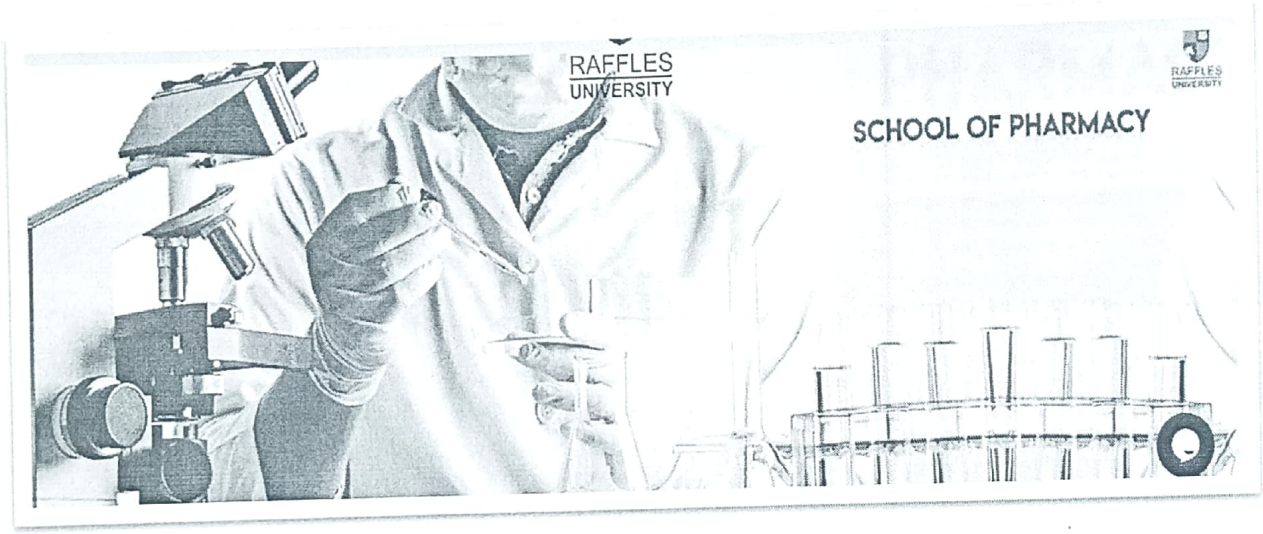

FIELD VISIT TO WATER TREATMENT PLANT

NEEMRANA

REPORT

1. INTRODUCTION

Raffles University of School of Pharmacy organizeda field visit to Water Treatment Plant, Neemrana as a part of Social pharmacy subject. Sixty students of Diploma in Pharmacy joined the visit under the guidance of faculty Asst. Professor Ms.Rani Kumari &Asst. Professor of Ms. Anjudip Yadav & Faculty of Mr. Gopal Singh, Mr.Sandeep singh and Mr. Yogendra Goyal. Students got an excellent benefit by visiting the biggest water purification plant in Neemrana with a capacity of 310 million liters /day and understand about the purification methods.

Water treatment is whereby the used water or raw water from the river is treated in process to make the water more acceptable for a desired end-used. The goal of water treatment is to remove existing contaminants in the water, or reduce the concentration of such contaminants so the water becomes fit for its desired end-used. The process involved in treating water is solids separation using physical process and chemical process.

Before the water is distributed into the public houses, the water has to undergo the water treatment process such as follows: -

- Aeration are to eliminate unneeded dissolved gases such as (CO_2, H_2S,NH_3).
- It is also to increase DO level in water and remove DOC
- Coagulation is the removal of turbidity from the water.
- Turbidity is a cloudy appearance of water caused by small particles suspended therein.Water with little or no turbidity will clear.
- Flocculation is mixing process in which particles are brought into contact in order topromote their agglomeration
- Sedimentation is to remove suspended material from water by the action of gravity.
- Filtration is to remove suspended particles from water by passing the water through medium such as sand.
- Disinfection is to destroy pathogens within a practicable period of time.

After water passes or flowing through all distinctive features, it's collected into water tank and ready to be supply to houses area.

Fig.1.1.Flowchart of water treatment palnt

2. OBJECTIVE

The objectives of visiting the water treatment plant are:-

- To study the types of water treatment plant used.
- To study the process of water treatment.

3. WATER TREATMENT PROCESS

i. **COLLECTION:-**

The raw water is supplied to the water treatment plant

ii. **COAGULATION:-**

The raw water is first treated with chemical coagulant alum. The dose of alum varies depending upon the turbidity, color, temperature & pH of the water.

iii. **FLASH MIXING:-**

Treated water is then subjected to violent agitation in a mixing chamber for a few minutes. This allows quick and rapid dissemination of alum throughout the bulk of the water.

iv. **FLOCCULATION:-**

This phase involves a slow and gentle stirring of the treated water in a flocculation chamber. The mechanized type of rotor is used. This causes the formation of thick copious white flocculent precipitate. The thicker the precipitate is, the higher is the settling velocity.

v. **SEDIMENTATION:-**

- The coagulated water is now lead into sedimentation tank where it is detained for 2-6 hrs when the flocculent precipitate together with impurities and bacteria settle down in the tank.
- At least 95% of the flocculent precipitate needs to be removed from the water before it is admitted to the rapid filters.

vi. **FILTERATION:-**

- Each filter unit has 6 sand beds – coarse pebble, fine pebble, coarse gravel, finegravel, coarse sand, fine sand.
- The thickness of sand bed is 110 cm.
- The under drains at the bottom of the filter bed collects the filter water.
- Sandfilters getting dirty and beginning to lose efficiency approaching 7-8 feetneeding, backwashing.

vii. **BACKWASHING :-**

- As filter proceeds, the suspended impurities and bacteria clog the filters.
- The filter soon becomes dirty and begins to lose their efficiency and is subjectedto backwashing.
- This is done by reversing the flow of water through the sand bed.
- Washing is stopped when clear sand is visible and the wash water is sufficientlyclean.
- It takes about 15 minutes.

viii. DISINFECTION :-

- This is the last step before storage and distribution of this water.
- The process used is **chlorination.**
- The chlorine gas is used for effective disinfection.

ix. RESERVOIR :-

- We have visited the reservoir where the purified water was stored.

4. CONCLUSION

Water plays a very important role in human life, whether for daily routine purpose or human health. This field visit gave us the knowledge about the purification of water on large scale and made us aware about the quality of water since it may affect the human health especially. Also the trip made us realized that it is not easy to supply the water directly from the main supply to the people. Thus, thanks to faculty and students for making this visit successful.

Fig.4. School of Pharmacy

VISIT REPORT

A visit to Primary healthcare system of government hospital was arranged for the students of Diploma in Pharmacy on 09th Febrauary 2022.A batch of 60 students along with faculty members of School of Pharmacy Ms Rani Kumari, Ms. Anjudip Yadav, Mr. Gopal Singh and Mr.Sandeep Singh. had visited the hospital.

The visit started at 2:30pm from college. We boarded the college bus to reach the hospital. We reached there around 3:00pm. We visited the different departments of the hospital like ICU, pharmacy, pathology lab, OPD, canteen and emergency services. A detailed explanation of each department was given during the visit. This was followed by detailed information about the role of hospital pharmacy in hospital, drug distribution system, inventory management and medication errors. In the end we visited the in-patient pharmacy store, where we had to chance the actual storage, purchasing and billing of drug to patients. We also saw the special precautions for storage of narcotic drugs.

Overall, the visit was very informative and enjoyable. We came to know regarding the role of Hospital Pharmacist in the overall health management.

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Fig1: Government Hospital, Neemrana with students and faculty members

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Fig 2: Diploma in Pharmacy (2021-2023)