The college has been constantly following a number of best practices like: "Butterfly Park", "English Language Laboratory", "Cleanliness Drive in the Campus", "E-News letter& E-Magazine", "Microbial Analysis of Water" etc. Apart from these ongoing practices the college has taken up a number of other best practices like: Old age home visit, Reuse of papers, Medicinal Park and National Awards in Chemistry etc.

I. Title of the Practice - Butter Fly Park

Objective: The butterfly park of Govt. Holkar Science College is more than just a garden of flowers and butterflies. It is set up as a living-open museum to educate the students and nature lovers as well as a research center to understand the insect world around us. Throughout the year almost 50 different types of butterfly and around 200 other types of invertebrates and vertebrates can be spotted here. Not all plants are used by butterflies for the collection of nectar. So if butterflies were provided with plants from where they collect the nectar they will not only start coming to the garden but breed also. Park at College is an open garden and is not covered to capture the butterfly.

- A. Efforts to make our ecosystem healthier in terms of increased flora and fauna.
- *B.* To make students and people aware to understand the nature and efforts needed to conserve them.
- *C.* To make the butterfly garden a bio-lab when in place of dissection of animals alternative Ways can be found out.
- D. Involvement of common people and spreading awareness for science and reducing diversity issues.

Values Projected thus the best Practice: 'If you protect the habitat animals automatically starts living in nature' is the motto of the Butterfly Park. The College is only providing a very good and protected garden where the Butterfly not only collects the food but breed also. The need for sustainable development is a key to the future of mankind. The degradation of our environment is linked to continuing problems of pollution, loss of forest, solid waste disposal, issues related to economic productivity, and national as well as ecological security. The increasing levels of global warming, the depletion of the ozone layer, and a serious loss of biodiversity have also made everyone aware of growing environmental concerns.

Social Impact: When you develop the concern, you will begin to act at your own level to protect the environment. In the rains and winters, the large activity of the Butterfly can be seen. Butterfly park becomes a hot spot for photographers, naturalists, and researchers. One can see the Butterfly moving around on the campus, collecting nectar, mating, and laying eggs. The media had reported these activities in the newspapers. Studies on diversity have also been carried out by the faculty of the college and during the seminars the presentations have been made. We have prepared a nameplate of about 200 plant species present on the college campus which includes botanical name, common name, and family of plant. This is a practice to inculcate general awareness about plants among students and visitors so that they know more about plant species. Tagging of nameplates to various plants present on the college campus.

II. Title of the Practice: "Microbial analysis of Water samples from different locations on GHSC campus"

Aim and Objectives :

A. Aim: To provide facility of safe and healthy drinking water in college campus.

B. Objectives: The main objective behind this project is to provide facility of safe and healthy drinking water. This study will help in following ways:

- Identifying existing problems
- Ensuring whether water is suitable for the intended use, especially if used for drinking purpose
- Tracking changes over time
- Determining the effectiveness of a treatment system

The quality of a water source may change over time, even suddenly. Changes can go unnoticed as the water may look, smell, and taste the same.

The Context: The college has drafted its research policy to ensure a safe and healthy environment for everyone who visits the campus for various reasons. One of the best practices initiated for the betterment of facilities provided by the college is to check the water quality on campus to provide safe drinking water on campus for all. The Department of Microbiology has undertaken the project for water analysis. Dr Sanjay Vyas, Head and faculty members Dr. Deepti Khare, Prof. Anuja Sharma, Dr. Radhika Waghmare along with research scholar Neha Sharma, M.Sc. final students and staff will be working on this project. Standard Drinking Water Checks will be performed quarterly every year from various departments and drinking points on campus regardless of the water source. Water used by public municipalities and private homeowners must be tested regularly in order to keep the source of water safe and free from environmental risks and potential health disorders. When the water is tested it offers the knowledge; required to address the problem that is currently involved with the water quality. It will also ensure that the water quality is protected from every potential cause of contamination and an appropriate approach is involved with the treatment system.

The Practice :Water testing is carried out to meet the regulatory requirements and adhere to the safety procedures that are needed for pollutant-free water.

- 1. Sampling of different water sources- tube well and R.O drinking water units on campus
- 2. Coliform bacteria- Indicate the presence of microorganisms in the water that are potentially harmful to human health.
- 3. Total dissolved solids- Represent the amount of inorganic substances (i.e. sodium, chloride, sulphate) that are dissolved in the water. High total dissolved solids (TDS) can reduce the palatability of water.

Evidence of Success: A total of 15 drinking water samples collected from various water sources on campus were analyzed every three months since the year 2016- till date in the Department of Microbiology. It was observed that out of 15 samples, 07 samples shown contamination by Coliforms in the session 2016-17. Out of 15 Samples 05 samples and 03 samples shown contamination by Coliforms in the sessions 2017-18 & 2018-19 respectively. In session 2019-20, out of 15 samples 02 samples shown contamination by Coliforms:

S.N.	YEAR	TOTAL NO.	CONTAMINATED	TOTAL
		OF SAMPLES	SAMPLE NO.	CONTAMINATED
				SAMPLES
1	2016-2017	15	03,04,05,06,07,08,10	07
2	2017-2018	15	03,04,05,07,10	05
3	2018-2019	15	03,04.05	03
4	2019-2020	15	03,04	02

Problems Encountered and Resources Required:The M.Sc. Students collected the samples from different water sources on campus and performed MPN for detecting the coliform using resources available in the department lab.











Fig. 1: Sample 3- Red building, growth of coliforms on EMB agar and MacConkey agar plates.



Fig. 2. Sample 4 - Gate 1 (R.O), growth of coliforms on EMB agar and MacConkey agar plates.



Fig. 3. Sample 5- Gate 1 (outer), growth of coliforms on EMB agar and MacConkey agar plates.



Fig. 4. Sample 6- Geology department, growth of coliforms on EMB agar plate.



Fig. 5. Sample 7- Examination department (outer), growth of coliforms on EMB agar and MacConkey agar plates.



Fig. 6. Sample 8- Examination department (R.O), growth of coliforms on EMB agar and MacConkey agar plates.

III. Title of the practice: Working of the Examination Department

OBJECTIVE: The aim of the Exam Department is to conduct the exams on time and declare the result at the earliest for the benefit of the students. The whole process is fair, impartial and transparent. The exam department aims at making the system smooth and hassle free for all. The department works with the objective of maintaining confidentiality, honesty and integrity of the entire procedure and to live up to the reputation of the institution To make innovations and thereby improve and upgrade the system according to the need of the hour.

Context: Holkar Science College is one of the oldest and the most prestigious institute in central India. It abides by the rules & regulations laid down by the Department of Higher Education Govt. of M.P. The number of students in the college is nearly 5000 and there are a variety of combinations at UG and PG levels. The exam department has to coordinate with all the departments regarding CCES, practical, seminars, internship etc. The department has to be watchful about on time conduction of exams, evaluation of the copies, declaration of the result etc.

Practice: There are five programs running successfully in the college namely B.Sc. BCA, M.Sc. M.Phil., Ph.D. The Exam Department functions round the year to maintain the annual time table declared by the Dept. of Higher Education. Some of the practices carried out by the department are:-

- > Central valuation of UG A/B's with the MOI by the setter.
- ➤ Valuation of PG A/B's by the paper setter
- Spot moderation (On the day of Examination)
- ➢ MOI prepared by the paper setter
- Showing valued A/B's to the students in front of parent's Subject expert and HOD of the subject concerned
- Revaluation of A/B's
- > Displaying the answer books of the Toppers
- Coding of A/B's
- Microscrutiny of A/B 's by subject expert
- Computerized Tabulation
- > In house printing of non confidential material
- Hologram sticking on Marksheet
- Merit Certificate to Toppers
- Revaluation in main & ATKT Exam
- M. Phil admission through Entrance Test followed by interview
- ▶ UG, PG admission through online system
- Exam fees deposition Online
- Special exam for those student who have represented in National/ state level activities of NCC/NSS etc.
- > Preparation of transcripts for students going abroad for further studies.
- Exam form can be downloaded from the college website
- Student's profile on college website with two layered security is available. A student can view his/her result, download exam forms, revaluation form, copy showing form etc.

- The profile of all departments are available on the website. It includes the details of the faculty members, syllabus of the programmes and all the courses/ papers, details of workshops, seminars, conferences etc.
- > Passport size photo of the student on the mark sheet.
- > Part of Aadhar number printed on mark sheet.
- > QR code printed on mark sheet.
- > Conduction of on line examination due to Covid-19 pandemic.
- IV. The Medicinal park: The Department of Horticulture has developed the Medicinal Park. The objective is to create awareness among the students and faculty members regarding the importance of natural therapy. The medicinal plants have some god gifted values which are harmless and can do wonders as there is no side effects. A number of plants are there in the park like-Neem, Amla, Jamun, Tulsi, Alovera etc. The college has developed certain rare species like- Sarpgandha which is used to cure acidity and is a uterine tonic, Bhringaraj used in the cure of headache and fever, Kelikand used in the cure of snake bite, Jaundice and leprosy etc.
- V. E-News letter&E-Magazine: The college publishes e-news letter quarterly to show the achievements of its faculty members and students in the field of academic, cultural and sports. These news letters are available on the college website. The annual magazine "Spectrum" is now released online. It includes articles, poems, stories of the students and faculty members and the annual report of all departments.
- VI. National Award in Chemistry: In the honour of Dr. S.S.Deshpande, the college has constituted an award in the field of chemistry. Dr. S.S.Deshpande served the institution as a dedicated professor. He was also an earnest researcher; he completed his Ph.D. degree under the guidance of Nobel Laureates Dr. Thrope and Dr. Dr.Todd. This award is comprise a cash prize of Rs. 21000/ alongwith a citation. In the international year of Chemistry the first award was given to Dr.T. Pradeep, IIT Chennai at the event of national seminar organized by the Department of Chemistry. Second and third awards were given Dr.C.S.Gopinath, NCL Pune and K.K.Pant, IIT Delhi

VII. Reuse of papers:

Objective : Reusing a paper several times before repurposing or recycling it prevents waste.

Context- Waste management is the biggest problem for the present as well as the future world.

The Practice- Flipping used paper over and printing on the other side saves money on buying new paper and disposing of used paper.

Evidence of success- Notices, Lab Assignments and CCE marks sheets etc. are printed on used papers