

Report on Participation in Teachers Training Workshop

Date: 30th November 2024

Venue: Bajaj College of Science, Wardha

On 30th November 2024, I had the privilege of participating in the Teachers Training Workshop at Bajaj College of Science, Wardha, during its second and concluding day. The event provided a platform for meaningful interaction and knowledge exchange.

During the hands-on session, I engaged actively with the participants, discussing key insights and practical approaches relevant to the workshop's objectives. This session was highly interactive and enriched by the enthusiasm and contributions of approximately 30 participating teachers.

Later, I was honored to participate in the Valedictory Function as a Guest of Honour. The function was graced by eminent personalities, including:

- **Dr. P. V. Tekade**, Principal of Bajaj College of Science
- **Dr. Sanjay Bagade**, Head of the Department
- **Dr. Umre**, Chief Guest and Professor of Chemistry, VNIT
- **Er. Jatin Kumar** and **Er. V. V. V. Satyanarayana**, from IUAC New Delhi
- **Mr. Mangesh Yerpude**, Organizing Secretary
- **Dr. Govinda Lakhotiya** and **Dr. Sudhir Tiple**, Faculty Members

The workshop was a well-organized and inspiring event, focusing on empowering educators through collaborative learning and skill enhancement. It was a privilege to be part of such an impactful initiative.

Bajaj College of Science, Wardha
 (An Autonomous Institute)
PHYSICAL CONSTANTS

Name	Value
Speed of light	$c = 2.998 \times 10^8 \text{ ms}^{-1}$
Planck's constant	$h = 6.626 \times 10^{-34} \text{ J}\cdot\text{s}$
	$h = 4.136 \times 10^{-15} \text{ eV}\cdot\text{s}$
Gravitation constant	$G = 6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$
Boltzmann constant	$k_B = 1.38 \times 10^{-23} \text{ J/K}$
Rydberg constant	$R = 1.097 \times 10^7 \text{ m}^{-1}$
Avogadro's number	$N_A = 6.023 \times 10^{23} \text{ mol}^{-1}$
Charge of Electron	$e = 1.602 \times 10^{-19} \text{ C}$
Permeability of vacuum	$\mu_0 = 4\pi \times 10^{-7} \text{ N/A}^2$
Permittivity of vacuum	$\epsilon_0 = 8.85 \times 10^{-12} \text{ F/m}$
Coulomb constant	$k = 9 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2$
Faraday constant	$F = 96485 \text{ C/mol}$
Mass of electron	$m_e = 9.1 \times 10^{-31} \text{ kg}$
Mass of Proton	$m_p = 1.6726 \times 10^{-27} \text{ kg}$
Mass of neutron	$m_n = 1.6749 \times 10^{-27} \text{ kg}$
Atomic mass unit	$u = 1.66 \times 10^{-27} \text{ kg}$
Stefan-Boltzmann constant	$\sigma = 5.67 \times 10^{-8} \text{ W/m}^2\cdot\text{K}^4$
Rydberg constant	$R = 1.097 \times 10^7 \text{ m}^{-1}$
Rabi magneton	$\mu_B = 9.27 \times 10^{-24} \text{ J/T}$
Bohr radius	$a_0 = 0.529 \times 10^{-10} \text{ m}$
Standard atmosphere	$p_0 = 1.01325 \times 10^5 \text{ Pa}$
Wien displacement constant	$b = 2.898 \times 10^{-3} \text{ m}\cdot\text{K}$
Electron volt (eV)	$1 \text{ eV} = 1.6 \times 10^{-19} \text{ J}$

Jankidevi Bajaj College of Science, Wardha
 DEPARTMENT OF PHYSICS
Laboratory Instructions

The objective of the laboratory is training. The experiments are designed to illustrate phenomena in different areas of Physics and to expose you to measuring instruments. Conduct the experiments with interest and confidence of observing.

You need to come well prepared for the experiment with completed writing work on the table of record book.

Work quality and carefully the whole purpose of experimentation is to make reliable measurements and equally share the work with your partners.

Be honest in recording and representing your data. Never make up readings or in any case, never try to get a better fit for a graph. If a particular reading or value seems to be an outlier, do not discard it. Record all the data recorded in the table have to be faithfully displayed on the graph.

All presentations of data, tables and graphs calculations should be ready and carefully done.

Bring necessary graph papers for each of experiment. Learn to calculate on graph paper. Graphs should be neatly drawn with pencil. Always label graphs and the axes and display units.

If you finish early, spend the remaining time to complete the calculations and observing graphs. Come equipped with calculator, scales, pencils etc.

Do not fiddle casually with apparatus. Handle instruments with care. Report any damage to the instructor. Return all the equipment before leaving the laboratory.





PHYSICAL CONSTANTS

Name	Value
Speed of light	$c = 3 \times 10^8 \text{ m/s}$
Planck's constant	$h = 6.63 \times 10^{-34} \text{ J}\cdot\text{s}$
Gravitation constant	$G = 6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$
Boltzmann constant	$k = 1.38 \times 10^{-23} \text{ J/K}$
Molar gas constant	$R = 8.314 \text{ J/mol}\cdot\text{K}$
Avogadro's number	$N_A = 6.023 \times 10^{23} \text{ mol}^{-1}$
Charge of Electron	$e = 1.602 \times 10^{-19} \text{ C}$
Permeability of vacuum	$\mu_0 = 4\pi \times 10^{-7} \text{ N/A}^2$
Permittivity of vacuum	$\epsilon_0 = 8.85 \times 10^{-12} \text{ F/m}$
Coulomb constant	$1/4\pi\epsilon_0 = 9 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2$
Faraday constant	$F = 96485 \text{ C/mol}$
Mass of electron	$m_e = 9.1 \times 10^{-31} \text{ kg}$
Mass of Proton	$m_p = 1.6726 \times 10^{-27} \text{ kg}$
Mass of neutron	$m_n = 1.6749 \times 10^{-27} \text{ kg}$
Atomic mass unit	$u = 1.66 \times 10^{-27} \text{ kg}$
Stefan-Boltzmann constant	$\sigma = 5.67 \times 10^{-8} \text{ W/m}^2\cdot\text{K}^4$
Rydberg constant	$R = 1.097 \times 10^7 \text{ /m}$
Bohr magneton	$\mu_B = 9.27 \times 10^{-24} \text{ J/T}$
Bohr radius	$a_0 = 0.529 \times 10^{-10} \text{ m}$
Standard atmosphere	$atm = 1.01325 \times 10^5 \text{ Pa}$
Wien displacement constant	$b = 2.9 \times 10^{-3} \text{ m}\cdot\text{K}$
Electron volt (eV)	$1 \text{ eV} = 1.6 \times 10^{-19} \text{ J}$

Laboratory Instruction

The objective of the laboratory is to train the student designed to illustrate phenomena in different areas of Physics and to do interesting experiments. Conduct the experiments and collect observations.

You need to come well prepared for the experiment with writing each on the last date of record book.

Work carefully and carefully take proper care of apparatus make suitable measurements and finally draw the wave pattern.

Be honest in recording and representing your data. Do not cheat and manipulate data to get a better figure or graph. Always label graphs and the axes and display units.

If you finish early, spend the remaining time in completing the report and drawing graphs. Come equipped with calculator, ruler and drawing paper. Write report in the laboratory notebook. Do not talk casually with apparatus. Handle instruments with care and respect to the instructor. Return all the equipment to the laboratory.



