



GOVERNMENT DEGREE COLLEGE (MEN)

ACCREDITED BY NAAC WITH B++ (CGPA 2.90)

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ICT BASED LESSON PLAN

Date and Time (duration)	28.03.2023
Class:	I MPCS
No. of students attended	32
Name of the Class Teacher	R.Ravi Kumar, Lecturer in Physics,GDC(M),Srikakulam
Title:	He-Ne Laser and Ruby Laser
Objectives	<ol style="list-style-type: none">1. Define Laser and understand the concept of Pumping and population Inversion in both Ruby and He-Ne Lasers.2. Describe the stages of acquiring population inversion.3. Pulsed laser output and continuous output of laser beams.4. Applications and importance of these lasers
Materials used	<ol style="list-style-type: none">1. Computer with projector2. Internet access3. Access videos from Youtube4. Whiteboard and markers5. Printed handouts with diagrams of Ruby and He-Ne Laser
Introduction (5 minutes) Begin with a captivating video or images.	<ol style="list-style-type: none">1. Did you see the Lasers/Laser show earlier?2. What you observed in the laser show?3. Full form of LASER?4. Who Explained principle of laser first theoretically?5. Who constructed laser first?6. What is first Laser?7. Do you know the applications of Laser?8. Tell me some applications?
Virtual Insect Exploration (10 minutes)	<p>Students were visualized the YouTube video and analyze the various stages of population inversion process and working of the laser.</p> <p>https://www.youtube.com/watch?v=yQ0IMSNuj_o</p> <p>https://www.youtube.com/watch?v=xsg9Yqwrh2w</p> <p>https://www.youtube.com/watch?v=1LmcUaWuYao&t=18s</p>

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<https://www.youtube.com/watch?v=2Oswmij538Q>

<https://www.youtube.com/watch?v=07rnnkkw9ts&t=235s>

**Presentation and Discussion
(20 minutes)**

Explain Working principles and components advantages, limitations and applications of both Ruby and He-Ne Lasers are explained by using white board and neat diagram.


The Ruby laser stands as a pivotal point in the history of laser technology, showcasing the feasibility of creating coherent light using a solid-state medium. While its use in practical applications has diminished over time, its historical importance and contributions to laser science and technology remain highly regarded.

We will explain the medium, pumping, stimulated emission, characteristics like wavelength, stability, coherence, power etc for both lasers.

Conclusion (5 minutes)

The Ruby laser is a historic milestone in laser technology, serving as a foundation for subsequent laser innovations and contributing to numerous scientific and practical applications.

The helium-neon (He-Ne) laser, with its stable and coherent red output, has played a significant role in both educational and scientific applications. While its use has declined in some areas due to advances in laser technology, it remains a noteworthy example of a gas laser and continues to find relevance in specific applications that require its unique characteristics.


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Activity photos

