

Unit 3 - Nonlinear Effects

Course outline

How to access the portal?

Introduction and Mathematical Representation

Nonlinear Effects

- Nonlinear Effects
- Nonlinear Effects (Continued)
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- Nonlinear Effects (Continued)
- Nonlinear Effects (Continued)
- Quiz : Week2 Assessment

Dispersion Effects and Transverse Electromagnetic Mode

Construction of Ultrafast Laser and Measurement of Pulses

Measurement Techniques in Ultrafast Spectroscopy, and their kinetic and quantum mechanical models

Ultrafast Processes in Physical Chemistry – Photophysics, Photochemistry, Solid State, Transition Metal Complexes and Biomolecules

Maxwell's Equations

Ab Initio Molecular Dynamics of Photochemistry and Photophysics – Part 1

Ab Initio Molecular Dynamics of Photochemistry and Photophysics – Part 2

Attosecond Chemical Dynamics – Theoretical Point of View

Attosecond Chemical Dynamics – Experimental Point of View

Femtochemistry of Nanocatalysis

Week2 Assessment

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-08-21, 23:59 IST.

1) In Vacuum, phase velocity of red light

1 point

- is higher than blue light
- is equal to blue light
- is lower than blue light
- cannot be compared with that of blue light.

No, the answer is incorrect.
Score: 0

Accepted Answers:
is equal to blue light

2) In a dispersive medium, phase velocity of red light

1 point

- is higher than that of blue light
- is equal to that of blue light
- is lower than that of blue light
- cannot be compared with that of blue light.

No, the answer is incorrect.
Score: 0

Accepted Answers:
is higher than that of blue light

3) What is the unit of GDD?

1 point

- fs
- fs²
- fs²/mm
- mm

No, the answer is incorrect.
Score: 0

Accepted Answers:
fs²/mm

4) All laser beams are of following quality:

1 point

- TEM₀₁
- TEM₁₁
- TEM₂₁
- TEM₀₀

No, the answer is incorrect.
Score: 0

Accepted Answers:
TEM₀₀

5) Which of the following items exhibits –GVD?

1 point

- Glass
- Quartz
- Water
- grating pair

No, the answer is incorrect.
Score: 0

Accepted Answers:
grating pair

6) Which of the following is correct?

1 point

- Focal length for a red light is equal to that for blue light
- Focal length for a red light is longer than that for blue light
- Focal length for a red light is shorter than that for blue light
- Focal length for a red light cannot be compared with that for blue light

No, the answer is incorrect.
Score: 0

Accepted Answers:
Focal length for a red light is longer than that for blue light

7) A Gaussian beam represents

1 point

- TEM₁₁ mode
- TEM₁₀ mode
- TEM₀₁ mode
- TEM₀₀ mode

No, the answer is incorrect.
Score: 0

Accepted Answers:
TEM₀₀ mode

8) Knife-edge measurement is used to measure

1 point

- pulse duration
- beam diameter
- kinetics of a reaction
- cross-correlation

No, the answer is incorrect.
Score: 0

Accepted Answers:
beam diameter

9) An error function is obtained from a normalized Gaussian function which is centered at t=0. Which one is correct?

1 point

- This error function reaches maximum at t=0
- This error function does not reach maximum at t=0
- his error function reaches minimum at t=0
- Error function follows a Gaussian profile.

No, the answer is incorrect.
Score: 0

Accepted Answers:
This error function does not reach maximum at t=0

10) Beam diameter refers to a Gaussian beam diameter for which intensity drops down to

1 point

- 1/e² of its maximum
- zero
- 1/4 of its maximum
- 1/e of its maximum

No, the answer is incorrect.
Score: 0

Accepted Answers:
1/e² of its maximum