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Courses » Laser Fundamentals and Applications

Announcements Course Ask a Question Progress FAQ

Unit 9 - Week 8 - Various Applications of Lasers, Laser safety and Summary

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Course outline

How to access the portal

Week 1 - Introduction to LASERs

Week 2 - Concept of population inversion, 2-level, 3-level, and 4-level systems, Components of LASERs

Week 3 - Threshold condition, Unique Properties of LASER, various parameters of a LASER

Week 4 - Pulsing techniques

Week 5 - Mode-Locking technique and types of LASER

Assignment 8

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

Due on 2019-03-27, 23:59 IST.

1) A LASER is emitting at a power of 250 mW, which class it should be placed? *1 point*

- I
- II
- IIIa
- IIIb

No, the answer is incorrect.
Score: 0

Accepted Answers:
IIIb

2) What is the full form of LASIK? *1 point*

- Laser assisted in situ keratomileusis
- Lamp assisted in situ keratomileusis
- Light assisted in situ keratomileusis
- Light assisted induced keratomileusis

No, the answer is incorrect.
Score: 0

Accepted Answers:
Laser assisted in situ keratomileusis

3) Which of the following is one of the biggest advantage of using ultrashort pulsed laser in surgical applications? *1 point*

- Very less expensive

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Applications of Lasers: Non-linear optics, LIDAR, Laser spectroscopy, Isotope enrichment and separation.

Week 8 - Various Applications of Lasers, Laser safety and Summary

- Lecture 36 - Laser Induced Chemistry
- Lecture 37 - Laser Induced Chemistry and Ultrafast chemical Dynamics
- Lecture 38 - Lasers in Medical Sciences
- Lecture 39 - Lasers in Material sciences and engineering and Optical Communications
- Lecture 40 - Laser safety and summary
- Quiz : Assignment 8
- Feedback For Week 8
- Solution for Assignment - 8

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Accepted Answers:
Very low tissue damage

4) Which of these laser has the maximum penetration depth in biological tissue system? ***1 point***

- CO_2 laser
- Nd:YAG laser
- Ar ion laser
- Excimer lasers

No, the answer is incorrect.
Score: 0

Accepted Answers:
Nd:YAG laser

5) Which kind of photooxidation involves generation of excited singlet oxygen ($^1O_2$*) from triplet oxygen ($^3O_2$) through interaction with triplet state of a sensitizer ^3S*? ***1 point***

- Type I photooxidation
- Type II photooxidation
- Type IIIa photooxidation
- Type IV photooxidation

No, the answer is incorrect.
Score: 0

Accepted Answers:
Type II photooxidation

6) Which of the following processes does not involve a LASER irradiation? ***1 point***

- LASIK
- Bar code scanning
- Transmission electron microscopy
- Two photon fluorescence studies

No, the answer is incorrect.
Score: 0

Accepted Answers:
Transmission electron microscopy

7) Which of the following technique is used to probe chemical bond dissociation dynamics? ***1 point***

- LIDAR
- laser printing
- LASIK
- Femtosecond pump-probe spectroscopy

No, the answer is incorrect.
Score: 0

Accepted Answers:
Femtosecond pump-probe spectroscopy

8) What is the following process called? ***1 point***

ABC+nhn --> ABC* --> ACB*

- Photo-ionisation
- Photo-isomerisation

- Photo-dissociation
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Photo-isomerisation

9) Identify the transition state of the following chemical reaction. ***1 po***

$CH_3I + Na \rightarrow CH_3 + NaI$

- CH_2I - - H - - Na
- CH- - I - - NaH_2
- CH_3 - - I - - Na
- CHI - - Na - - H_2

No, the answer is incorrect.
Score: 0

Accepted Answers:
CH_3 - - I - - Na

10) The study of transition state of chemical reaction using femtosecond Laser was pioneered by? ***1 point***

- Ahmed Zewail
- Richard Bershon
- C. Bradley Moore
- Andre Persoons

No, the answer is incorrect.
Score: 0

Accepted Answers:
Ahmed Zewail

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