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NPTEL

Unit 5 - Week 4 - Pulsing techniques

Assignment 4

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment. **Due on 2019-02-27, 23:59 IST.**

1) Acousto optic modulator (AOM) is related to which pulsing technique? ***1 point***

- Cavity damping
- Q-switching
- Mode locking
- Not related to any pulsing technique

No, the answer is incorrect.
Score: 0

Accepted Answers:
Cavity damping

2) Which of the following optic(s) is not used in the Q-switching technique? ***1 point***

- Quarter wave plate
- Half wave plate
- Polarizer
- Pockels cell

No, the answer is incorrect.
Score: 0

Accepted Answers:
Half wave plate

3) According to Pockels effect, refractive index of the medium changes_____ with the electric field. ***1 point***

- Linearly
- Quadratically

Linearly

4) Which of the following pulsing technique is capable of producing the shortest pulse? ***1 point***

- Q-switching
- Mode-locking
- Cavity damping
- Mechanical chopper

No, the answer is incorrect.
Score: 0

Accepted Answers:
Mode-locking

5) The principle of a mode-locking pulsing technique is based on ***1 point***

- Refraction
- Diffraction
- Interference
- Reflection

No, the answer is incorrect.
Score: 0

Accepted Answers:
Interference

6) In Q-switching method quality factor (Q) is _____ ***1 point***

- Decreased
- Increased
- Kept unchanged
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Decreased

7) Which of the statements below is incorrect? ***1 point***

- Q-Switching involves storage of energy in active medium
- Cavity dumping involves storage of energy within the cavity
- Q-Switching involves storage of energy within cavity
- Mode-locking involves storage of energy in active medium

No, the answer is incorrect.
Score: 0

Accepted Answers:
Q-Switching involves storage of energy within cavity

8) A Laser system has bandwidth 150 THz and cavity length 200 cm. What will be its pulse width? (1THz = 10^{12} Hz, 1 fs = 10^{-15} sec) ***1 point***

- 8.4 fs
- 5.5 fs
- 2.3 fs
- 6.7 fs

No, the answer is incorrect.
Score: 0

Accepted Answers:
6.7 fs

9) If the frequency separation between two modes (°Ã) is 60MHz, what will be the time gap between two pulses of that a LASER output? (1MHz = 10^6Hz; 1 ns = 10^{-9}sec) ***1 point***

- 16.7 ns
- 33.4 ns
- 60.0 ns
- 12.6 ns

No, the answer is incorrect.
Score: 0

Accepted Answers:
16.7 ns

10) Quality factor (Q-factor) is inversely proportional to the_____ ***1 point***

- Energy stored in the cavity
- Energy loss per optical cycle
- All of the above
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Energy loss per optical cycle

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