Unit 13 - Week 11

Week 11 assignment 11

The due date for submitting this assignment has passed. **Due on 2018-10-17, 23:59 IST.**
As per our records you have not submitted this assignment.

1) ***2 points***

$n(\lambda) = A + \frac{B\lambda^2}{\lambda^2 + C}$ The zero dispersion wavelength is (where A,B, C are po parameters)

(a) $\sqrt{\frac{c}{2}}$ (b) $\frac{c}{3}$ (c) $\sqrt{\frac{c}{3}}$ (d) $\frac{c}{2}$

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(c)

2) ***2 points***

The dispersion in a particular material is given by $n(\omega) = n_0 - \frac{\Gamma(\omega - \omega_0)}{\Gamma^2 - (\omega - \omega_0)^2}$ expression for the inverse of group velocity is (Γ is a constant)

(a) $\frac{1}{C}\left(n(\omega) + \omega\frac{dn}{d\omega}\right)$ (b) $\frac{1}{C}\left(n(\omega) - \omega\frac{dn}{d\omega}\right)$ (c) $\left(n(\omega) + \omega\frac{dn}{d\omega}\right)$

- (a)
- (b)
- (c)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(a)

3) ***2 points***

For Q2, the expression for group velocity dispersion parameter(D_λ) is

(a) $\left(\frac{d^2}{d\,\omega^2}\left(\frac{\omega n(\omega)}{c}\right)\right)$ (b) $\frac{-2\pi c}{\lambda^2}\left(\frac{d^2}{d\,\omega^2}\left(\frac{\omega n(\omega)}{c}\right)\right)$ (c) $\frac{2\pi c}{\lambda^2}\left(\frac{d^2}{d\,\omega^2}\left(\frac{\omega n(\omega)}{c}\right)\right)$

(b)

4) 2 points

A single mode fiber is measured to have $\lambda^2\left(\frac{d^2n}{d\lambda^2}\right) = 0.02$ at 0.8μm. Calculate dispersion parameters β_2 (in ps^2/m).

(a) -2.83×10^{-2} (b) 2.83×10^{-3} (c) 2.83×10^{-26} (d) 2.83×10^{-2}

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(d)

5) 2 points

What type of nonlinearity is responsible for self-focusing

(a) 2nd order (b) 3rd order (c) 4th order

- (a)
- (b)
- (c)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(b)

6) 2 points

The length for a perfect optical phase conjugation mirror is (κ has the usual meani

(a) $\frac{\pi}{2|\kappa|}$ (b) $\frac{\pi}{4|\kappa|}$ (c) $\frac{\pi}{|\kappa|}$

- (a)
- (b)
- (c)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(b)

7) 2 points

The phase conjugation mirror is called an oscillator if

(a) $|\kappa|L = \frac{\pi}{2}$ (b) $|\kappa|L = \frac{\pi}{4}$ (c) $|\kappa|L = \pi$

- (a)
- (b)
- (c)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(a)

8) 2 points

A laser light of wavelength 488 nm is incident on a hydrogen cell ,the strokes sh output wavelength is (the difference in energy in the vibrational spectra of the hydr atom is 4156 cm^{-1})

(a) 306 nm (b) 612 nm (c) 1024 nm (d) 1224 nm

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(b)

9) **2 points**

A laser light of wavelength 488nm is incident on a hydrogen cell ,the Anti-st shifted output wavelength is (the difference in energy in the vibrational spectra o hydrogen atom is 4156 cm^{-1})

(a) 406 nm (b) 812nm (c) 1024 nm (d) 1550 nm

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(a)

10) **2 points**

A laser light of wavelength 488nm is incident on a gas chamber which co Oxygen ,the strokes shifted output wavelength is (the difference in energy i vibrational spectra of the hydrogen atom is 1552 cm^{-1})

(a) 1056 nm (b) 812nm (c) 528 nm (d) 1550 nm

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(c)

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