NPTEL » Ultrafast Optics and Spectroscopy

Unit 7 - Ultrafast Processes in Physical Chemistry – Photophysics, Photochemistry, Solid State, Transition Metal Complexes and Biomolecules

outline	Assessment week 6
access the portal?	The due date for submitting this assignment has passed.
duction and	As per our records you have not submitted this assignment.
eduction and hematical Representation	In Vacuum, divergence of electric and magnetic field:
nlinear Effects	cannot be determined
	is zero
persion Effects and	does not depend on the volume charge density
nsverse Electromagnetic de	depends on volume charge density
ode	
nstruction of Ultrafast	No, the answer is incorrect. Score: 0
ser and Measurement of	Accepted Answers:
es	is zero
and the state of t	2) For a plane wave, magnitude of wave vector is
easurement Techniques in	For a plane wave, magnitude of wave vector is
rafast Spectroscopy, and eir kinetic and quantum	oproportional to the wavelength
chanical models	inversely proportional to the wavelength
	oproportional to the square of wavelength
afast Processes in	inversely proportional to the square of wavelength
ysical Chemistry –	No, the answer is incorrect.
stophysics,	Score: 0
ochemistry, Solid State, sition Metal Complexes	Accepted Answers:
Biomolecules	inversely proportional to the wavelength
	3) A plane wave propagating along +z direction is represented by
Itrafast Physical Chemistry:	of A plane wave propagating along +2 direction is represented by
Photophysics and	$\bigcirc E=E_0\cos(\omega_0t+k_0z)$
Photochemistry	\bigcirc E=E ₀ cos($\omega_0 t$)
Ultrafast Physical Chemistry:	\bigcirc E=E ₀ cos(- ω ₀ t)
Solid State	\bigcirc E=E ₀ cos(ω_0 t-k ₀ z)
Ultrafast Physical Chemistry:	No, the answer is incorrect.
ransition Metal Complexes Score: 0	
nd Biomolecules	Accepted Answers:
Quiz : Assessment week 6	$E=E_0 \cos(\omega_0 t - k_0 z)$
xwell's Equations	4) In a dielectric medium, divergence of magnetic field:
Anono Equations	annot be determined
Initio Molecular Dynamics	is zero
Photochemistry and	does not depend on the volume charge density
otophysics - Part 1	depends on volume charge density
telle Maria	
Initio Molecular Dynamics	No, the answer is incorrect. Score: 0
Photochemistry and stophysics – Part 2	Accepted Answers:
opinjoiso i dit a	is zero
osecond Chemical	
namics - Theoretical Point	5) SVEA approximation suggests that
ew	variation of the envelope function is slower than the carrier wave
	a slowly propagating pulse
osecond Chemical	variation of the carrier wave is slower than the envelope function
namics – Experimental nt of View	none of above
III. OI TIGW	
ntochemistry of	No, the answer is incorrect. Score: 0
nocatalysis	Accepted Answers:
	variation of the envelope function is slower than the carrier wave
	Phase-matching can be achieved in a

Accepted Answers: limit x→0

You were allowed to submit this assignment only once.

Assessment week 6	
The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.	Due on 2019-09-11, 23:59 IST.
In Vacuum, divergence of electric and magnetic field:	1 poin
cannot be determined	
ois zero odoes not depend on the volume charge density	
depends on volume charge density	
No, the answer is incorrect. Score: 0	
Accepted Answers: is zero	
For a plane wave, magnitude of wave vector is	1 poin
proportional to the wavelength	
inversely proportional to the wavelength	
oproportional to the square of wavelength inversely proportional to the square of wavelength	
No, the answer is incorrect. Score: 0	
Accepted Answers: inversely proportional to the wavelength	
	4 t-
3) A plane wave propagating along +z direction is represented by	1 poin
$ E=E_0\cos(\omega_0t+k_0z) $ $ E=E_0\cos(\omega_0t) $	
$ E=E_0\cos(-\omega_0t) $ $ E=E_0\cos(\omega_0t-k_0z) $	
No, the answer is incorrect.	
Score: 0 Accepted Answers:	
$E=E_0 \cos(\omega_0 t - k_0 z)$	
In a dielectric medium, divergence of magnetic field:	1 poin
cannot be determined is zero	
does not depend on the volume charge density	
Odepends on volume charge density No, the answer is incorrect.	
Score: 0 Accepted Answers:	
is zero	
5) SVEA approximation suggests that	1 poin
variation of the envelope function is slower than the carrier wave	
a slowly propagating pulse variation of the carrier wave is slower than the envelope function	
none of above	
No, the answer is incorrect. Score: 0	
Accepted Answers: variation of the envelope function is slower than the carrier wave	
6) Phase-matching can be achieved in a	1 poin
birefringent crystal	
gas medium in any medium	
in liquid only	
No, the answer is incorrect. Score: 0	
Accepted Answers: birefringent crystal	
7) Phase-matching bandwidth is	1 poin
proportional to the nonlinear medium's thickness	T pont
proportional to the nonlinear medium's refractive index	
inversely proportional to the nonlinear medium's thickness proportional to the nonlinear medium's absorption	
No, the answer is incorrect. Score: 0	
Accepted Answers: inversely proportional to the nonlinear medium's thickness	
8) Which one of the following is true in a dispersive medium:	1 poin
red light travels faster than blue light blue light travels faster than red light	
red and blue light travels with equal velocity Green light travels faster than red light	
No, the answer is incorrect.	
Score: 0 Accepted Answers:	
red light travels faster than blue light	
9) In a birefringent crystal, ordinary and extraordinary rays experience	1 poin
the same refractive index different refractive index	
different direction of reflection	
O all above No, the answer is incorrect.	
No, the answer is incorrect. Score: 0 Accepted Answers:	
different refractive index	
10) Maximum of Sinc ² (x) function appears at	1 point
○ x=0	
x=+∞ 	
Olimit x→0	
No, the answer is incorrect. Score: 0	