

Name :

Neptun id. number:

"Nobel-prize physics in ..."

Make Up Test 4

1. The characteristics wavelength of the applied laser pulse in the optical fiber network:

- a. 480 nm b. 500nm c. 1150 nm d. 1550 nm e. none of them

2. The characteristics loss in optical fiber is:

- a. 0,2 dB/km b. 0,8 dB/km c. -0,2 dB/km d. 0,02 dB/km e. none of them

3. Brewster's angle (also known as the polarization angle) is an angle of incidence at which light with a particular polarization is perfectly transmitted through a transparent dielectric surface, with no reflection. When unpolarized light is incident at this angle, the light that is reflected from the surface is therefore perfectly polarized. This special angle of incidence is named after the Scottish physicist Sir David Brewster (1781–1868). /Wikipedia/ The Brewste's angle can be calculated with:

a. $\sin\Theta_B = n_1/n_2$	b. $\Theta_B = \arcsin(n_1/n_2)$	c. $\Theta_B = \arctan(n_2/n_1)$	d. $\tan \Theta_B = n_1/n_2$	e. none of them
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4. In the optical fibre:

- a. the light energy in the fiber is not completely confined in the core.
b. the light energy in the fiber is completely confined in the core.
c. the propagating light can be modeled using geometric optics.
d. the refraction index of the cladding is greater, than the refraction index of the core.
e. none of them

5. Give the refraction index of a particular transparent medium surrounded by air, if the critical angle for total internal reflection is 37° .

- a. 1.397 b. 1.662 c. 1.414 d. 2.024 e. none of them

Show your work!