

## Quiz 4

Name:

Date: 19.03.2024

### Question 1

Why is the wavelength of 1550 nm used for telecom based on SiO<sub>2</sub> based fibers? (one sentence!)

Lower loss in this region

### Question 2

Name two properties that are characteristic of glass. (one sentence!)

Amorphous  
Transparent in visible range

### Question 3

The Abbe number is defined by:

$$v_d = \frac{n_d - 1}{n_F - n_C}$$

**A)** What is the dimension of the number?

Dimensionless

**B)** What do the coefficients  $n_d$ ,  $n_F$  and  $n_C$  correspond to?

Refractive indices of yellow, red and blue characteristic wavelength

**C)** What does a high or low Abbe number indicate?

Low Abbe number -> big chromatic aberration  
High Abbe number -> small chromatic aberration