


BTS CIEL		TD
Cybersécurité, Informatique et réseaux, Electronique		
	Optical fiber	Nom :
		Prénom :

### **Part 1 : Read the text below and write down unknown words**

Have you ever thought about how you get emails or any other information from any corner of the world within a blink of an eye ?

This has been made possible by a network of cables which are laid under the ground and below the oceans.

The cables which carry most of world's data are optical fiber cables. There are also used in medical equipment.

Several questions come to us:

- How does optical fiber work ?
- How does optical fiber have revolutionized the world around us ?
- Why do we use optical fiber rather than copper cables ?

This video may give you some answers ...

[https://www.youtube.com/watch?v=jZOg39v73c4&ab\\_channel=Lesics](https://www.youtube.com/watch?v=jZOg39v73c4&ab_channel=Lesics)

list of unknown words and translation

### **Part 2 : watch the video about the optical fiber technology (up to 3:44) and answer questions with sentences.**

1- How many fiber strands make up an optical fiber cable ?

2- What is the size of a fiber strand ?

3- What is the form of the transmitted information in an optical fiber ?

4- What is the physical phenomenon used by the optical fiber ?

5- How is it possible to modify the reflective index of the glass ?

6- What is the name of the angle which allows a total internal reflection used in fiber optical cable to transmit light ?

7- What is the form and the material used to transmit light and named the core glass ?

8- Why is it not possible to put the protecting coating directly above the core glass ?

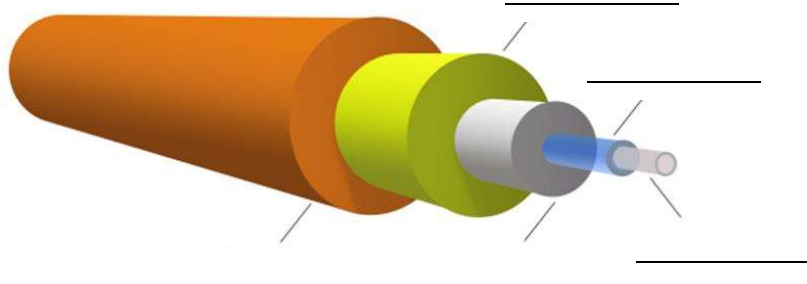
9- What is the easy way to overcome this issue ?

10- What is the name of this layer above the core glass ?

11-What is the base material used for the core glass and the cladding ?

12- What is the main difference between these two parts ?

13- Name all the different parts on the drawing.



The coating: the layer of thicker plastic surrounds the cladding and helps protect the fiber core.

The cable jacket: the outermost layer of the fiber cable.

The core: physical component that transports the optical data signal made up of a continuous strand of glass.

The strengthening fibers: the strengthening fibers help protect the core against damage during installation or from crushing.

The cladding: the layer that protects the core and causes the necessary reflection to allow the light to travel through the fiber core segment.

### Part 3 : Vocabulary to be known

.....	a strand
la lumière	.....
.....	a layer
transporter	.....
.....	reflective index
transmettre	.....
un cylindre en verre	.....
un dopant	.....
.....	to overcome
phénomène physique	.....
.....	issue
.....	the core glass
la réfractivité	.....
la réflexion	.....
la gaine optique	.....
.....	the coating
fibres de renfort	.....
.....	the cable jacket