

INITIAL QUESTIONNAIRE: TESTING FIBER OPTIC INSTALATIONS WITH OTDR

Question 1. Regarding an OTDR:

Select one option:

- a) It is a device that helps us to verify if the optical links that we have in an installation meet a series of minimum requirements.
- b) It is used to locate a problem in the fiber once it has been verified and what it may consist of.
- c) It is able to locate a problem in an optical fiber but we will not be able to know its type
- d) 1 and 2 are correct

Question 2. OTDR is useful in certain situations, such as:

Select one option:

- a) LAN or building installations, where cables are typically a few meters long
- b) On single mode fibers where reflections due to bad connectors may cause serious problems.
- c) When you want to measure losses in an optical link
- d) None of the answers given is correct

Question 3. OTDRs show several problems when using them, some of which are:

Select one option:

- a) It should not be used to measure losses in the fiber optic link
- b) It is very suitable for use in LAN or building environments, where the cables are only a few meters long
- c) It does not allow to see stretching or bending in the fibers caused by a bad installation
- d) All answers 1 and 2 are both correct

Question 4. Indicate which of all the statements is correct:

Select one option:

- a) The OTDR works indirectly
- b) The OTDR uses forward scattered light to make its measurements
- c) Answers 1 and 2 are both correct
- d) Answers 1, 2 and 3 are all correct

Question 5. Match the following events with their corresponding graphs:

A:

Pigtails (short lengths of fiber that have mechanical type connections at both ends)
Figure 3. Reflectivity peak at the end of the fiber resulting from the connectors
Cuts (drop in intensity down to noise level)
Fusion splices

Cracks (fiber partially damaged but its continuity has not been completely destroyed)

B:

Pigtails (short lengths of fiber that have mechanical type connections at both ends)

Figure 3. Reflectivity peak at the end of the fiber resulting from the connectors

Cuts (drop in intensity down to noise level)

Fusion splices

Cracks (fiber partially damaged but its continuity has not been completely destroyed)

C:

Pigtails (short lengths of fiber that have mechanical type connections at both ends)

Figure 3. Reflectivity peak at the end of the fiber resulting from the connectors

Cuts (drop in intensity down to noise level)

Fusion splices

Cracks (fiber partially damaged but its continuity has not been completely destroyed)

D:

Pigtails (short lengths of fiber that have mechanical type connections at both ends)

Figure 3. Reflectivity peak at the end of the fiber resulting from the connectors

Cuts (drop in intensity down to noise level)

Fusion splices

Cracks (fiber partially damaged but its continuity has not been completely destroyed)

E:

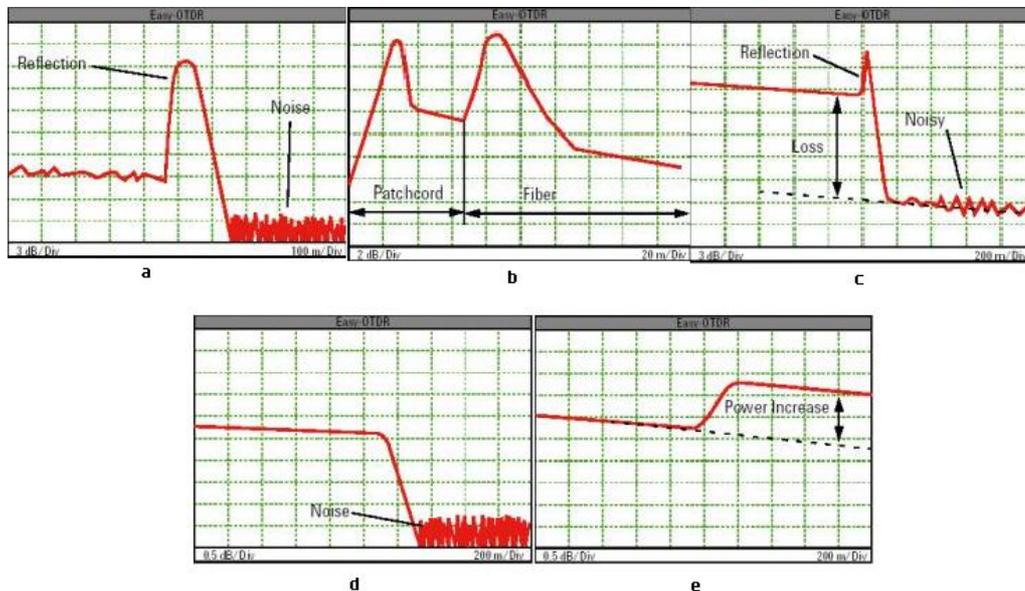
Pigtails (short lengths of fiber that have mechanical type connections at both ends)

Figure 3. Reflectivity peak at the end of the fiber resulting from the connectors

Cuts (drop in intensity down to noise level)

Fusion splices

Cracks (fiber partially damaged but its continuity has not been completely destroyed)



Question 6. The dynamic range in an OTDR is:

Select one option:

- a) It is the least important feature of an OTDR
- b) The dynamic range determines the maximum power loss between the beginning of the backscatter and the noise peaks
- c) The dynamic range is independent of the pulse width and wavelength settings used

- d) All the above answers are correct

Question 7. The width of the pulse is one of the most important parameters to modify in a measurement, since it determines the resolution in the calculation of the distance, which is key to distinguish the events, but also acts on the dynamic range of the equipment. But in what sense?

Select one option:

- a) The larger the pulse, the better the resolution. However, a long pulse means that the dynamic range is short and the trace could be noisy.
- b) The smaller the pulse, the better the resolution. However, a short pulse means that the dynamic range is short and the trace could be noisy.
- c) If you want to measure long distances you need to have a high dynamic range, and therefore the pulse will have to be very short
- d) A large pulse will be chosen if we want to measure the losses of splices and connectors that are very close to each other

Question 8. To characterize at a physical level a GPON based on fiber optic is going to be used:

Select one option:

- a) One OTDR for multimode links
- b) One OTDR for single mode links
- c) Any type of OTDR, that is, single mode or multimode

Question 9. To analyze the optical trace and events that appear in the channels of the GPON. Please indicate which statement is correct:

Select one option:

- a) Only the downstream channel located at 1310 nm will be analyzed
- b) Only the upstream channel located at 1490 nm will be analyzed
- c) Both channels (downstream, upstream) located at 1310 nm and 1490 nm respectively will be analyzed.
- d) Both channels (downstream, upstream) located at 1490 nm and 1310 nm, respectively, will be analyzed

Question 10. What is the maximum length of the GPON access network to be analyzed at the physical level?

Select one option:

- a) Up to a maximum of 25 kilometers
- b) Up to a maximum of 20 kilometers
- c) Up to a maximum of 15 kilometers