

1. Fill the numbers of correct statements concerning optical networks in the following simple table.

An optical network using Dense Wavelength Division Multiplexing can include (among others):

2
3
4
5
6
7
10

- 1 – Fabry-Perot LASERS **(no, it is suitable only for CWDM)**
- 2 – Cooled Distributed Feedback LASERS **(yes)**
- 3 – Single Mode Fibres **(yes)**
- 4 – EDFA amplifiers **(yes)**
- 5 – Semiconductor Optical Amplifiers **(yes)**
- 6 – Dispersion compensating Fibres **(yes)**
- 7 – Optical splitters **(yes)**
- 8 – Optical Time Domain Reflectometers **(no, it is a power meter)**
- 9 – Optical cleavers **(no, it is used to cut fibres)**
- 10 – Array Waveguide Gratings **(yes)**



2. Tick the boxes referring to correct claims concerning lasers and optical amplifiers.

- ☐ The width of a spectral line of used LASERs is negligible in DWDM.
- X Temperature stability of LASERs is negligible in CWDM.**
- X DFB lasers work on the principle of stimulated emission of radiation.**
- ☐ DFB lasers work on the principle of spontaneous emission of radiation.
- ☐ SOA gain increases with temperature of a chip.
- ☐ EDFA works on the principle of spontaneous emission of radiation.
- X EDFA requires a pump operating at the wavelength of 980 nm.**
- X EDFA gain is about 30 – 50 dB.**
- X Raman amplifier produces gain at the wavelength shifted by about 100 nm from the pump's wavelength.**
- X Raman gain can be produced in Dispersion Compensating Fibres.**

3. Assign the terms from the left column to the corresponding definitions on the right.