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)**

1. 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.**

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

|  |  |  |
| --- | --- | --- |
| FTTEx |  | Optical fibres are terminated at the local telephone exchange, DSLAM splits signal to existing metallic lines to provide xDSL |
|  |  |  |
| FTTCab |  | Optical fibre reaches the group of buildings |
|  |  |  |
| FTTC |  | Optical fibres reach particular buildings, where they can be terminated |
|  |  |  |
| FTTB |  | Optical fibres are terminated at the end user’s socket |
|  |  |  |
| FTTO |  | Optical fibres are terminated in a outdoor splitter |
|  |  |  |
| FTTH |  | Optical fibres terminate at the office of customers with huge demands on the transmission rate |