★★★ ＜知的財産翻訳検定【第4回<和文英訳>試験】＞答案用紙 ★★★

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＜選択問題解答＞

[問 1]

1. A network storage access terminal for establishing a connection for storage between an external device and a storage device located in a network, comprising:
an interface unit communicating with the external device;
an authentication unit carrying out authentication through communication with an authentication server located in the network;
a wireless connection managing unit receiving, from a processing server located in the network, connection information for the storage device, establishing a connection path to and from the storage device using the connection information, sending to the external device information on the storage device including at least the name and access right of a folder corresponding to a storage area on the storage device, and thereby having the external device confirm the identity of the storage device; and
a data processing and conversion unit which, upon receiving data from the external device, processes and converts the data and sends it to the storage device with which the connection for storage is established.

[問 2]

The optical frequency shifter, capable of shifting the frequency (or wavelength) of incoming light by a predetermined amount of offset, is one of the most important devices used in the wide-ranging fields of opto-electronics and quantum electronics, as typically found in optical communication systems, optical measuring instruments, and spectroscopic instruments. For use in optical frequency shifters, a variety of methods for shifting optical frequencies have been proposed.

For example, an optical frequency shifter available on the market today uses the acoustooptical effect, namely the diffraction of light caused by an acoustic wave (compressional wave) traveling inside a crystal. Unfortunately, the upper limit of the operating frequency of optical frequency shifters based on this principle is limited to as low as several hundred megahertzs. This limit comes from two fundamental problems intrinsic to the principle: first, the propagation loss of an acoustic wave traveling through a crystal increases dramatically at high frequencies, and second, at frequencies higher than approximately 1 GHz, no diffraction occurs because the wavelengths of acoustic waves become shorter than those of light. It is therefore impossible to increase the amount of offset in light frequency beyond a certain limit using frequency shifters based on such a principle.

[問 3]

In Figure 1, a local oscillation circuit 10 comprises an LC resonance circuit composed of a coil L and a capacitor C1, and a transistor TR that amplifies a resonance current generated by the LC resonance circuit. One end of the coil L is connected to the ground via a diode D4 and also to a resistor R2 through which a tuning voltage VT is applied. The other end of the coil L is connected to the ground via a diode D3 and a resistor R1. The end of the diode D3 that is directly connected to the resistor R1 is connected also to one end of the capacitor C1. The other end of the capacitor C1 is connected to the base of the transistor TR and also to the ground via a resistor R5. The collector of the transistor TR is connected to a constant-voltage source +B via a resistor R3 and also connected to its base via a resistor R4. The emitter of the transistor TR is connected to the ground via a capacitor C2 and also via a resistor R6.