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級/科目:「1級/電気・電子工学」

※以下に解答を設置問題順に記入してください。

[問1]

WHAT IS CLAIMED IS:

1. A portable telephone comprising:

an acquiring unit configured to acquire position information;

- a storing unit configured to store a calling telephone number;
- a display data selecting unit configured to select, in the telephone number stored in the storing unit, a telephone number in an area indicated by the position information; and
- a displaying unit configured to display the telephone number selected by the display data selecting unit.
- 2. The portable telephone according to claim 1, wherein the acquiring unit has at least one of (i) a unit configured to acquire position information of the portable telephone itself using a signal sent from a GPS satellite, (ii) a unit configured to acquire position information of the portable telephone itself using longitude and latitude information sent from a base station, and (iii) a unit configured to acquire position information of the portable telephone itself using position information sent from the base station.

〔問2〕

In a lighting device utilizing solar cells, the cost required in proportion to the use of the device is very small because of the principle of the device. The initial installation cost covers most of the whole cost. Use of large capacity solar cells and storage batteries for obtaining a large lighting capability results in a comparatively expensive facility cost. It is therefore desirable that the capability of a device that has been installed be used as much as possible. On the other hand, from the viewpoint of the functionality of a lighting device, it is important that a lighting device can be always turned on when needed without service interruption. In this case, a large lighting capability is not so

much required. A lighting device having the minimum capability is generally accepted. In this point, large capacity solar cells and storage batteries lead to an excessive capability of the device, causing large uselessness in facility cost.

It has been proposed to set lighting time depending on the remaining capacity of a storage battery to prevent overdischarge of the storage battery (for example, see Japanese Utility Model Laid-Open No. 12-345678). However, this only increases or reduces the lighting time, and does not have a functionality that a lighting device can be always turned on when needed without service interruption. Thus, the proposed lighting device is insufficient.

〔問3〕

Fig. 2 shows backlight lighting procedures by a microcomputer 73. When the power supply switch 77 is turned on, a memory in the microcomputer 73 is initialized (step 1, hereinafter "step" is referred to as "S"). Then, the switch 78 is closed to turn on a backlight 75a (S2). Next, when an input process of an operation keyboard 72 is performed (S3), it is determined whether or not the input information is a command related to communication (S4). If the result is YES, the switch 78 is opened to turn off the backlight (S5). Thereafter, a predetermined communication command process (S6) is performed. Upon completion of the process, the backlight is turned on again (S8). If the result of the determination in S4 is NO, a predetermined command process (S7) is performed with the backlight kept on.

As a result, power consumption is reduced by turning off the backlight during communication that consumes much power. This reduction enables the lifetime of a battery to be extended. Note that since the display on a liquid crystal display 71 is required during operation of the operation keyboard 72 and after reading of data from a data carrier 1, there is no harm in turning off the backlight during communication.