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問 1 .

WHAT IS CLAIMED IS:

1. A power supply device for a hybrid vehicle, comprising:
  - a high voltage circuit including a high voltage storage device connected to a first motor generator coupled to a drive wheel;
  - a low voltage circuit including a low voltage storage device connected to a second motor generator coupled to an engine;
  - a control system circuit including: a converter connected to the high voltage circuit to step down electric power; and a control device connected to the converter;
  - a switch device provided between the low voltage circuit and the control system circuit and configured to operate selectively in one of a first connection state in which the second motor generator is isolated from the control device and connected to the low voltage storage device and a second connection state in which the second motor generator is isolated from the low voltage storage device and connected to the control device; and
  - a fail-safe device configured to, in case of a failure in which no electric power is supplied from the converter to the control device, establish the second connection state of the switch device and a power generation state of the second motor generator to supply electric power from the second motor generator to the control device.

2. The power supply device according to claim 1, wherein the failure is caused due to lack of electric power in the high voltage storage device or a failure in the converter.

問2.

There has been known an online battle card game, as one of social games, which is achieved by converting a well-known real card game into electric form and enabling a play on a network.

Characters are depicted on digitized cards, each assigned with battle values such as an attack force and a defense force.

When each of two members selects a predetermined number of cards from his or her hand and places them to a battle field, software of a social media executes computations and notifies the two members of a result of the battle. In response to the result of the battle, for example, a winner takes a card or cards from a loser, based on which the software executes data processing of updating card possession information.

In the case where another social game is regarded as a master game, the card game according to this invention can be positioned as a slave game which operates dependently in conjunction with the master game.

Connection between the master game and the slave game generates multiplier effects, resulting in improvement in enjoyment of taking part in the game, leading to invigoration of the social media.

問3.

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In the energy minimization calculation 103 in Fig. 1, the state of each node (e.g., a degree of stress of each node and an indicator value of stress) is changed probabilistically such that energy of the overall system is reduced as small as possible. This computation is finished when a predetermine length of time has passed or a predetermined number of calculations have been executed.

As illustrated in the graph 206 in Fig. 2B indicating the correlation coefficient with respect to the number of passes or a distance  $r$ , the correlation coefficient  $R$  gradually attenuates, with increase in the number of passes  $r$ , while alternately taking a positive value and a negative value. This tendency of the correlation coefficient is well similar to a behavior of the spin correlation function in an antiferromagnetic material as one kind of a magnetic material, providing the following indication.

The tendency in which adjacent nodes are opposite in high and low values of the degree of stress reminds one about Antiferromagnetic Ising Model that expresses interactions for spinning adjacent electrons respectively in opposite directions in the magnetic material. Ising Model has played an important role in magnetic materials science as a basic model of the magnetic material. According to Ising Model, an arrangement of spins of electrons is determined so as to minimize energy function consisting of the term relating to spin-spin interactions (exchange interactions) and the term relating to an external magnetic field.