# 1995 Paper 12 Question 2

Designing Interactive Applications

The figure below shows the controls for a telephone answering machine, designed to meet requirements for low manufacturing cost, efficient operation and ease of learning. The controls include:

(A) a button to *start* recording (of outgoing message) or playback (of outgoing or incoming messages);

(B) a button to *stop* recording, playback or rewind;

(C) a button to *rewind* the incoming-message tape;

(D) a button to step between the four *modes*: outgoing-message-play, outgoing-message-record, incoming-messages-play and incoming-messages-record (the normal mode for awaiting calls);

(E) a display indicating the current mode;

(F) a light that flashes to show how many messages have been received.
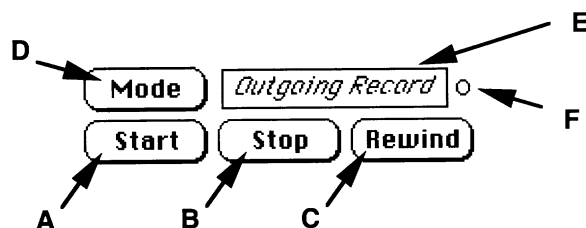
What forms of mental model are likely to be acquired by users of the answering machine, both owners (that is, recipients of calls) and callers? [5 marks]

An additional feature is proposed for the answering machine, allowing the owner to record special outgoing messages, each one to be played when calls are received from an owner-specified telephone number. To record such a message, the owner of the machine sets it in outgoing-message-record mode, keys in the telephone number in question using the attached telephone's push-buttons, and records the message in the normal way, using the *start* and *stop* buttons. Up to 16 special outgoing messages, each for a different incoming telephone number, can be recorded in this manner.

You have been asked to review this proposed new feature, in terms of the owner's ability to learn to use the machine in an error-free manner. What problems can you identify in the feature's design? Propose solutions that are consistent with the original requirements. [15 marks]

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