MILITARY COLLEGE OF SIGNALS
MIDTERM EXAM
BESE 14 – (A & B)
CSE 476 Human Computer Interfacing

Instructor: A/P Dr. Imran Siddiqi **Time: 90 Minutes**
Max Marks: 30

(2+2+2+2)

1. Differentiate between the following and give at least one example of each:
   a. Retroactive interference & proactive inhibition
   b. Recall & recognition
   c. Slips & mistakes
   d. Gulf of execution & gulf of evaluation

(2+1.5)

2. **a.** What is a chord keyboard? How many keys would you need on such a keyboard to allow the input of all alphanumeric characters (‘a’ to ‘z’, ‘A’ to ‘Z’ and ‘0’ to ‘9’)?

b. Give one example each where the following could be used as an input or output device.
   i. Head-up Display
   ii. Digital Paper
   iii. Handwriting Recognition

(5+2)

3. **a. List** the features of *direct manipulation* and discuss whether the act of dragging a folder icon to the trash can satisfies these features.

b. Deleting files by dragging them to the trash can is a perfectly intuitive *metaphor*. Macintosh designers extended this metaphor to include the function of ejecting diskettes: drag an image of the diskette to the trash can to eject it from the computer. Do you view it as an obvious *metaphor*? If not, identify the problem.

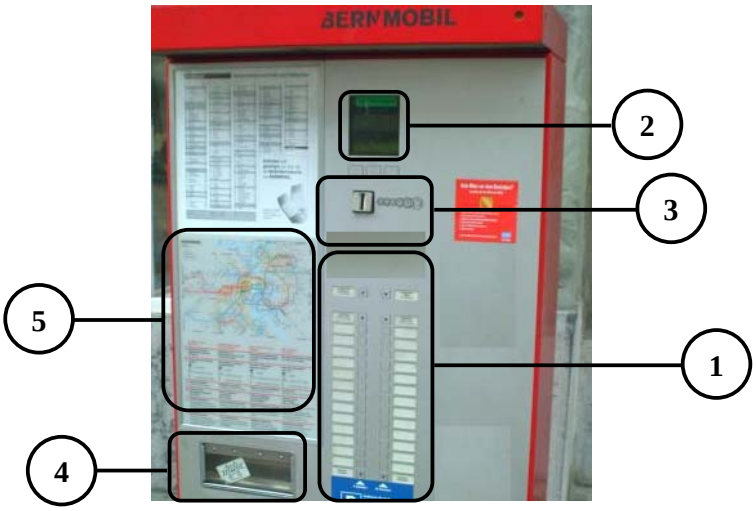
(1.5+1.5+1.5)

4. **a.** What is *persona* and when is it useful?
b. What is the difference between global and local structure of navigation design?
c. What are *bread crumbs* in a web page and why are they useful?

(3+4)

5. **a.** Imagine your class room and assume that there are a total of 10 lights arranged in two columns (5x2). Often it is desirable to turn on/off a particular light but the switch board does not indicate which button goes with which light. Design a switch board layout that makes it possible to instantly identify the mapping between buttons and lights.

b. The transport system in the Swiss capital Bern comprises buses and trams and you can get the tickets at the ticketing machines installed at the bus/tram stations. The image below illustrates (a simplified form of) such a machine.



A session with the machine comprises following steps:

a. User selects the destination station from panel (1) where all the stations are listed.
b. The ticket price for the selected station is displayed in panel (2).
c. User introduces the exact amount in the form of coins into slot (3).
d. The ticket is printed and user collects it from tray (4).
e. A network map is also displayed in panel (5).

Assuming that the machine only provides the functionalities listed above, **list** the pros and cons of this machine.