**UID Test 1 Marking Guide 2016**

**Question 1**

A) The process of Interaction Design involves four basic activities. List them. **(4 Marks)** ☐

- Identifying needs and establishing requirements,
- Developing alternative designs,
- Building interactive versions of the designs, and lastly
- Evaluating designs

B) Define the term Interface Metaphor as used in Interaction Design **(1 Mark)**

- Another way of describing conceptual models is in terms of interface metaphors. By this is meant a conceptual model that has been developed to be similar in some way to ***aspects*** of a physical entity (or entities) but that also has its own behaviors and properties. EX. The desktop, Spreadsheets, etc.

C) List any 2 benefits and disadvantages of interface Metaphors **(4 Marks)** ☐

Benefits of Interface Metaphors

- Firstly the opportunity of the individual to learn the systems and products easier.
- Secondly it helps the users to comprehend the model applied.
- Finally due to their innovation it expands the number of active users' range (Rogers et al 2011).

Disadvantages of interface Metaphors

- Metaphors break the cultural protocols.
- It implements conflict with the design principles and it can oblige designers on how to conceptualize a problem.
- It averts the user to use computers without the use of metaphors.
- It limits the imagination and it leads the designers to sometimes use bad existing designs into new products (Rogers et al 2011).

D) Define the term Conceptual Model **(1 Mark)** ☐

- A description of the proposed system in terms of a set of integrated ideas and concepts about what it should do, behave and look like, that will be understandable by the users in the manner intended.

E) List any three benefits of Conceptualizing when building Interactive Products **(3 Marks)** ☐

- Orientation
  - enables design teams to ask specific questions about how the conceptual model will be understood
- • Open-minded
  - prevents design teams from becoming narrowly focused early on
- • Common ground
  - allows design teams to establish a set of commonly agreed terms

F) When developing Interactive products, there are a number of Interaction types you can decide to implement. Briefly describe any four **(4 Marks)**

- Command Line Dialogue
- Menu Interaction Style
- Form Fill-In Interaction Style
- Direct Manipulation
- Natural Language Interfaces ☐

G) Differentiate between Synchronous and Asynchronous communication. **(2 Marks)** ☐

- **Synchronous** Communication is where conversations are in real time and are supported by letting people talk with each other either using their voices or through typing

**WHILE**

- **Asynchronous** Communication is one where communication between participants takes place remotely and at different times

H) List any two pros and cons of Asynchronous communication. **(4 Marks)** ☐

Pros of Asynchronous communication

- Ubiquity: Can read any place, any time.
- Flexibility: Greater autonomy and control of when and how to respond, so can attend to it in own time rather than having to take a turn in a conversation at a particular cue.
- Powerful: Can send the same message to many people. Makes some things easier to say:
- Makes some things easier to say: Do not have to interact with person so can be easier to say things than when face to face
- Asynchronous Distributed Interface can support continuous tasks eg project management.
- They support communication and coordination e.g. emails, blogs, group calendars.

Cons of Asynchronous communication

- Flaming: When a user writes incensed angry email expressed in uninhibited language that is much stronger than normally used when interacting with the same person face to face.

- Overload: Many people experience message overload, receiving over 30 emails or other messages a day. They find it difficult to cope and may overlook an important message while working through their ever-increasing pile of email-especially if they have not read it for a few days.

- False expectations: An assumption has evolved that people will read their messages several times a day and reply to them there and then.

I) List any 2 advantages and disadvantages of Direct Manipulation as used in interaction ☐Design **(4 Marks)**

Advantages of Direct Manipulation ☐

- Novices can learn basic functionality quickly, usually through a demonstration by a more experienced user.
- Experts can work extremely rapidly to carry out a wide range of tasks, even defining new functions and features.
- Knowledgeable intermittent users can remember how to carry out operations over time
- Error messages are rarely needed.
- users experience less anxiety
- Users can see immediately if their actions are furthering their goals, and if not, they can simply change the direction of their activity.

Disadvantages of Direct Manipulation ☐

- May be hard to code/Programme

- May require graphics displays and pointing devices

- Not suitable for small graphic displays.

- Spatial and visual representation is not always preferable.

- Compact notations may better suit expert users.

- Metaphors can be misleading since the "the essence of metaphor is understanding and experiencing one kind of thing in terms of another" (Lakoff and Johnson 1983: p. 5), which, by definition, makes a metaphor different from what it represents or points to.

J) When building interactive products, it is important to understand users and their ☐cognitive processes. List any 3-design implications for a product that satisfies the ☐"Attention" cognitive process **(3 Marks)**

- **Using color**
- **Using motion**
- **Possibly using animation**
- **Using good organization**
- **Balance the tradeoff between overcrowded / sparse displays** ☐

K) Understanding user cognition is an important aspect of designing User Interfaces. In ☐particular human memory places limitations on how users interact with computers. Errors and mistakes are often attributed to human memory issues.☐i) Briefly outline any 5 components of human memory as described by information processing models. **(5 marks)**

- SENSORY MEMORY processes incoming sensory information for very brief periods of time, usually on the order of 1/2 to 3 seconds. ☐
- WORKING MEMORY - After stimuli enter sensory memory, they are either forwarded to working memory or deleted from the system.
- LONG-TERM MEMORY - Unlike sensory and working memory, long-term memory is not constrained by capacity or duration of attention limitations.

L) Most modern Graphical User Interfaces (GUIs) are based on the Desktop Metaphor seen with operating systems such as Windows and Mac OS.☐i) What is meant by the term *Desktop Metaphor* in the context of User Interfaces? **(3 Marks)**

- **Desktop metaphor** is an interface metaphor, which is a set of unifying concepts used by graphical user interfaces to help users interact more easily with the computer

ii) What is it about the *Desktop Metaphor* that makes it easy to use and therefore popular with users? **(5 Marks)** ☐

- The desktop metaphor popularized by Xerox, then Apple contains office references (desk top, documents, folders) mixed with building references (windows, trash cans). New metaphorical references and enrichments of the existing references are occurring all of the time.

M) List any 2 limitations of using human processor models in building Interactive systems ☐**(2 marks)** ☐

- It assumes that the person in only doing one thing at a time. It is quite common to

be making a phone call and typing something at the same time or any other type of multi-tasking.

- It does not consider the effects of other people whilst the person is carrying out the task. For instance holding a conversation whilst interacting with the interface.

- It does not deal with the environmental conditions the person is in. For example a telephone repair person, up a pole in the freezing cold, trying to make a test phone call, has an entirely different experience compared to a person calling in a comfortable office.

N) Briefly describe the concept of Distributed Cognition as used in Interaction Design ☐**(2 Marks)** ☐

- **Distributed cognition** is a branch of **cognitive** science that proposes **cognition** and knowledge are not confined to an individual; rather, it is **distributed** across objects, individuals, artifacts, and tools in the environment. Originators: Edwin Hutchins in the 1990s.

O) Briefly describe a scenario where the concept of distributed cognition is exhibited in the use of an Interactive product **(3 Marks)** ☐

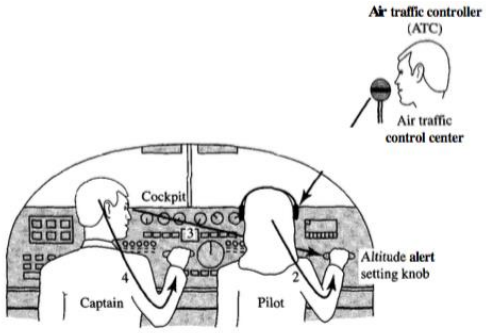


Figure 4.16 A cognitive system in which information is propagated through different media.