1. How relevant is Consistency and Standardization in UID? (2 Marks)

Makes similar things to look and act similar, different things to look different and act different,

2. The main goal of heuristic evaluations is to identify any problems associated with the design of user interfaces. As a usability consultant discuss at-least 4(four) heuristics that you can use to evaluate the usability of a system. (Any 4 points -8 Marks)

Visibility of system status/feedback: your design should keep users informed of actions or interpretations, changes of state or condition, and errors or exceptions that are relevant and of interest to the user through clear, concise, and unambiguous language familiar to users.

Match between system and the real world: The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented term.

User control and freedom: Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Consistency and standards: Users should not have to wonder whether different words, situations, or actions mean the same thing. Meaningful and useful ways based on clear, consistent models that are apparent and recognizable to users. Putting related things together and separating unrelated things, differentiating dissimilar things and making similar things resemble one another. The structure principle is concerned with your overall user interface architecture

Error prevention: Your design should be flexible and tolerant, reducing the cost of mistakes and misuse by allowing undoing and redoing,

Recognition rather than recall: Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another.

Help users recognize, diagnose, and recover from errors: Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution

Help and documentation: Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation.

Aesthetic and minimalist design: Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

Flexibility and efficiency of use: Your design should make simple, common tasks simple to do, communicating clearly and simply in the user's own language, and providing good shortcuts that are meaningfully related to longer procedures.

3. Why is Human Computer Interaction important today? (4 Marks)

Human-computer interaction is an important discipline when designing, evaluating and implementing interactive computing systems for human use

4. It is always important to understand some of the properties of the human that your are designing a system for; how can you design for the following human characteristics?.

a) Perception (any two points -2 Marks)
Perception is influenced, mostly by experience.
   - **Similarity design**. Our eyes and mind see objects as belonging together if they share a common visual property, such as color, size, shape, brightness, or orientation.
   - **Matching patterns design.** We respond similarly to the same shape in different sizes. The letters of the alphabet, for example, possess the same meaning, regardless of physical size.

b) Long and Short term memory (any two points -2 Marks)
   - Use meaningful / familiar designs wherever possible
   - Simplify decision-making by using assistive technology

c) Visual Acuity (any two points -2 Marks)
   - Use of differing Intensity (brightness, lightness)
   - Use of shape e.g. box frame which can be easily recognised/picked out
   - Colour and/or shading
   - Underlining (not recommended in printed text – can slow reading)
   - Character size and *font*
   - Movement e.g. 'micons'
   - Sound and/or synthesized speech

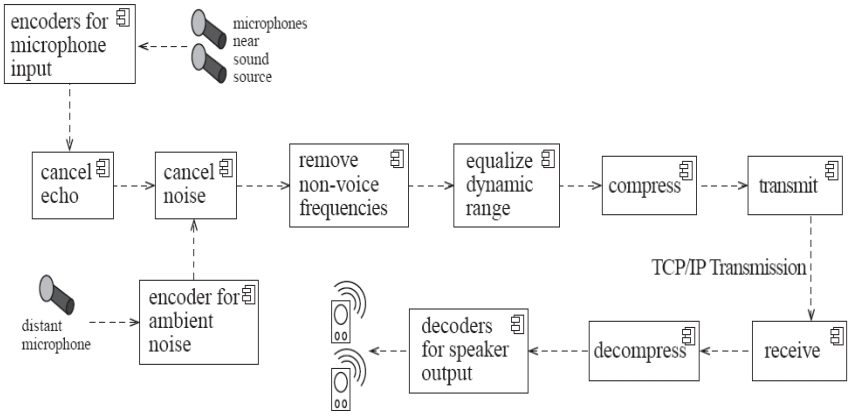
5. Give atleast 3 reasons why you need to develop a software architectural model (any 3 points -3 Marks)

   - To enable everyone to better understand the system
   - To allow people to work on individual pieces of the system in isolation
   - To prepare for extension of the system
   - To facilitate reuse and reusability

6. *Architectural patterns* or *architectural styles* allow a software engineer to design flexible systems using components. Using an illustration, how would you design a software architectural model using *either* pipe and filter *or* Model View Controller Architectural pattern? (4 marks for illustration and 3 marks for explanation)

Pipe and Filter: A stream of data, in a relatively simple format, is passed through a series of processes

   - Each of which transforms it in some way.
   - Data is constantly fed into the pipeline.
   - The processes work concurrently.
   - The architecture is very flexible.



Model View Controller Architectural pattern

Model is composed of

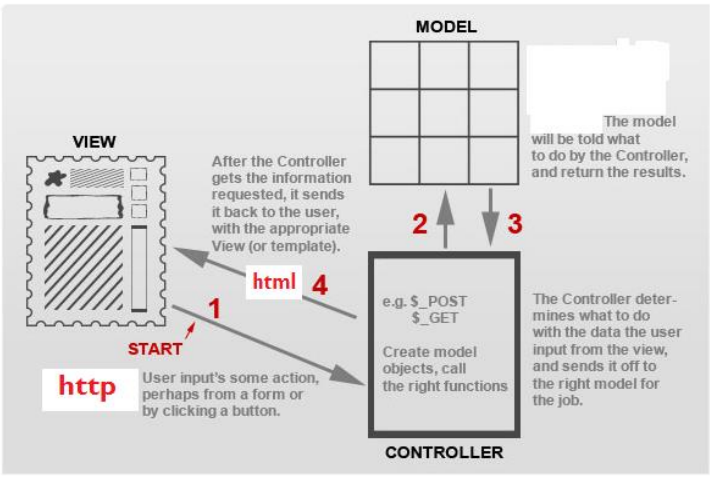
- The data (i.e state)
- Methods for accessing and modifying the state

View is composed of

- Renders contents of model for user
- When model changes, view must be updated

Controller is composed of

- Translates user actions (ie interactions with view) into operations on the model
- Example user actions: button clicks, menu selections



How do you integrate User Centered Design if you work with innovative Information Technology?

Innovative technology in this case refers to new technology, therefore the following issues must be addressed with emphasis on using a new technology/piece of artifact.

1. *User Analysis (how does your understanding of user groups influence the way you present a new technology): So, what must you do in the user analysis?*

   (A clear explanation of how one could use User Analysis techniques is expected): Questionaires, interviews, etc….

2. *Task Analysis (How can new technology be customized to be goal oriented): So, what must you do in the task analysis?*

   (A clear explanation of how new technology can be embraced inline with the Task Analysis objectives is expected):

   This involves – user training, guided walkthroughs, migration practices

How do we address user participation when we work in organizations with freelancers and independent contractors?

First of all, organisations part of the staff must be a core staff, who can wholly use the systems in place.

Such members of staff are duty bound to train staff who come in as freelancers and independent contractors who in this case are always new users. So while doing a UCD approach with them, one must be careful about the knowledge they possess, how much time they will exist in the organization as a user analysis may be biased and therefore incorrect.