1)State any four of the characteristics of the human-centered design (HCD)

a) Considering the overall consumer experience

b) Adopting multidisciplinary skills and perspectives

c) Clear understanding to the users, tasks and environments

d) Involving the consumer in the design and production process

2)Highlight the main aims of prototyping

a) **Evaluating and Testing the Design**

**-**  By creating a prototype, it is possible to sit down with a real version of the product and determine which aspects are worthwhile and which parts need to be revised or discarded. In this process, it may be possible to find glaring omissions that, on paper, weren’t noticeable

**b) Clarifying Production Costs and Issues**

**-** By prototyping before production begins, it is possible to take a glimpse at the production process and see if any steps can be changed, combined or even removed

**c)  Selling the Product to Others**

**-** With a prototype in hand, the concept instantly becomes real and it is far easier to sign a purchase order.

**d)**  **Patents**

**-** By having a working prototype, it is much easier to sit down with a patent attorney and see what design aspects may be patentable. On the reverse side, it is possible to see what parts of the prototype and design violate patents of other individuals and how they can be changed before production

3)TexIT Inc. provides users with the possibility to use either the standard version of its website

Or a text-only version. Consider that an evaluator would like to set up an experiment to using the

Standard version

a) Define the following terms

i) independent variable (cause for the outcome)

It is the variable that is changed or controlled in a scientific experiment to test the effects on [the dependent variable](https://www.thoughtco.com/definition-of-dependent-variable-604998), It represents the cause or reason for an outcome

**Example 1**

-A scientist is testing the effect of light and dark on the behavior of moths by turning a light on and off.

**Example 2**

-In a study to determine the effect of temperature on plant pigmentation.

ii)dependent variable(outcome)

 is the variable being tested and measured [in a scientific experiment](https://www.thoughtco.com/design-science-fair-experiment-606827). The dependent variable is 'dependent' on the independent variable.

iii)hypothesis

 A statement of the predicted or expected relationship between two or more variables or a proposed explanation for some observed phenomenon.

b) From the above situation , determine

i)the independent variable(s)

**From Example 1**

The [independent variable](https://www.thoughtco.com/what-is-an-independent-variable-606110) is the amount of light

**From Example 2**

The independent variable (cause) is the temperature

ii)the level(s) of the independent variable(s)

-independent has two levels

a) control

b) experimental

Generally, the number of levels of an independent variable is the number of experimental conditions.

-From both example 1 and example 2 the levels of independent variables according to the experimental conditions are **2 levels**(**1 from example and 1 from example 2)**

,iii)the dependent variable(s)

**From Example** 1

The moth's reaction is the [dependent variable](https://www.thoughtco.com/what-is-a-dependent-variable-606108).

**From Example 2**

The amount of pigment or color is the dependent variable (the effect).

4)An adaptive or adoptable system should ideally contain of: a domain model ,a user model ,an interaction model. Define the following terms as used in HCI:

a) Adaptability

Refers to users that can substantially customise the system through tailoring activities by themselves. When something is adaptable, it means it can be easily adapted (generally by someone, or something) to accommodate a change

b) Adaptivity

means that something is consistently able to change itself, to accommodate and maximise the benefits of change.

**PART** **B**

5) Discuss any 3 advantages and 3 disadvantages of Heuristic Evaluation

**Advantages**

a) You can obtain feedback early in the design process.

b) It can provide some quick and relatively inexpensive feedback to designers.

c) Assigning the correct heuristic can help suggest the best corrective measures to designers.

**Disadvantages**

a) Trained usability experts are sometimes hard to find and can be expensive.

-A number of experts are required and this can be time consuming and expensive to research and set up.

b) The evaluation may identify more minor issues and fewer major issues.

c) Difficult to summarize findings from multiple evaluators since each report problems differently at different levels

6)Describe any 4 desirable characteristics or requirement of prototyping tools

a) support component-based development (i.e., permit definition and support for coding re-useable program objects).

b)  provide a visual and interactive programming environment (e.g., context sensitive syntax for statements and functions, or drop-down lists of properties and methods).

c)  support interactive development for data access (e.g., SQL).

d) fit in with the technical infrastructure (i.e., work with middleware, database and network).

7)The software developers at BeIT Inc have come up with a prototype of the intended company’s website.They have decided to use cognitive walkthrough type of evaluation .Who would be the participant in this type of evaluation

8)Computer-Supported Cooperative Work(CSCW) refers to collaboration between individuals via computing technologies .CSCW systems are built to allow collaboration between humans via the computer.Two important features of CSCW systems are

i)the mode of interaction they support and ( ii )the geographical distribution of the users .Decompose the features further and consequently describe the emanating four- category classification of CSCW systems

i)the mode of interaction they support

 most commonly used classification for the mode of interaction is between asynchronous (occurring at different times) and synchronous (occurring at the same time) working

These two forms of interaction are important in distinguishing computer support for different tasks.

( ii )the geographical distribution of the users

Cooperative systems are often classified as either local, with group members co-located in the same environment or remote with members at different locations.

This divide is concerned as much with the accessibility of users to each other than their physical proximity.

categories of CSCW systems are:

## Same Place Same Time

## This is the field where interacting people are present at the same place and time. The most common examples are meetings and classrooms

1. Different Time Same Place

This form of interaction was not present before humans learned to store information. Traditional examples are written words and drawings. For example, somebody leaves a note for somebody else is a form different-time/same-place interaction.

## Same Time Different Place

## Since computers are connected, they have been used by people who reside in geographically distributed locations to communicate and work together. Groupware systems usually provide shared workspaces, where users participate in form of virtual meetings.

d) Different Time Different Place

The most well known Different-Time/Different-Place example is e- mail. E-mail is intended as communication media for two or small groups of users.