***Factors to take into account when designing a HCI***

**Consistency of signposting and pop up information**

e.g. Every ‘Next’ should be in the same place using the same icon. Navigation around the program should be clear consistent and easy to follow. – intuitive, learn faster

**Clear navigational structure**

e.g. It speeds things up if there is a similar route through the programs (if it is clear) as users do not have to keep learning things / Helps users learn their way around the system.

**Layout appropriate to the task**

There should be standard ‘feel’ to software. e.g. Large/minimal text for a child to minimise reading which builds up user confidence./ Bright colour scheme to attract a young child’s attention. Doing a repetitive task such as entering holiday bookings means you have less guidance on the screen. Note Nothing to do with devices

**Customisable to suit the needs of the user**

e.g. Makes it more efficient if the user can change items to suit their work preference.

**Location of where machine is to be used**

e.g. No sound in a noisy area. Touch screens in museums / factories / etc, (with explanation of why).

**House Style/Ethos (Not Consistent Layout)**

e.g. So that it conveys who the organisation is and all the company docs look/feel the same.

**Specific point about colour blindness**

e.g. Design to avoid red/green combination - blue/yellow best combination.

**On Screen / online helpfiles (built in with software)**

e.g. Rather than wasting time looking in manuals, important if no outside help available when working. / Tool tips telling the user what to do. / interactive user manual that answers general FAQ. No marks if can be read as a Google search.

**Disabled Access**

e.g. If a person is blind then the computer could recognise voice input / Braille keyboard.

**Expertise of the user/ ability of user / difference between novice and expert user**

An expert user will need shortcuts so that the task can be completed as quickly as possible (Command line) whereas a novice will need a number of steps to guide them (GUI).

***Describe the factors that should be taken into account when designing an appropriate layout of an HCI that would be used by a young child learning how to read.***

* Have a minimum amount of text on screen
* Use child friendly font/size of font
* Use bright colours to attract the child’s attention
* Have an uncluttered appearance
* Involve minimal use of the keyboard / alternative input devices
* Use speech synthesis / sound so that they can hear the words
* Animation/videos to keep their interest
* Instant feedback on their responses
* Interactivity e.g. quizzes, educational games
* Visual prompts e.g. pictures of a cat

***Discuss the needs of a disabled computer user and describe how they can be met when designing a suitable Human Computer Interface (HCI).***

* Visually impaired people can have their screens configured using large fonts.
* Magnify areas of the screen for people with poor eyesight.
* If a person is visually impaired, then ICT can help them by getting the computer to speak the words when they are being typed in.
* Visually impaired people can also use special Braille keyboards to enter the data and can use Braille printers to produce output which other blind people can read.
* Use of correct colour schemes for colour blind people.
* Use large mouse or trackerball for people with poor co-ordination.
* Use of speech recognition rather than keyboard/mouse who cannot use their arms, etc.
* Blow pipes (sip and puff switches) or eye movements for entering text / controlling devices.
* Brainwave controlled devices for physically handicapped.

***Discuss the different needs of a novice and an expert computer user, and describe how they could be met when designing a suitable Human Computer Interface (HCI).***

Needs of the user (up to 2 marks if mention both)

* The novice user’s priority will be ease of learning/intuitive
* The expert user will want to get the job done in the shortest possible time.

How these could be met (Max 3 marks)

* Novice user will need clear navigation structure / Colour scheme making it easier to use i.e. showing routes through a program (hyperlinks) (1)
* Novice user will use wizards which are not as flexible as setting it out yourself (1)
* Novice user will use help screens / tutorials to get them out of difficulties / show them how
* to do things (1)
* Expert user knows the commands (1) and will find it quicker than clicking through a series of windows (1) (dos window to use ipconfig compared to getting the same information from windows (1))
* Increased number of ways of performing the same operation (1)
* Shortcuts which the experienced user can use rather than going through a series of menus (1)
* Expert ;Customise the interface to suit their needs (1)