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National University of Computer and Emerging Sciences, Lahore Campus

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Instruction/Notes: Solve on question paper, answer sheets are not required.

Question1. What input and output devices would you use for the following systems? For each, compare and contrast alternatives, and if appropriate indicate why the conventional keyboard, mouse and CRT screen may be less suitable. **(3 x 4 Points)**

(a) Portable word processor for blind and normal users.

Input Device1:

Scanner
Because if they write something on paper the scanner will scan it

Input Device2:

Microphone: Using microphone they can say words to be processed.

Output Device1:

Printer. The scanned document will get printed.

Output Device2:

Speaker. The user will get the word ~~bagobaaaaaa~~ from the speaker as an output

2.5

(b) Tourist information system

Input Device1:
Microphone can be used for adding information in the system

Input Device2:
Keyboard the user can enter his/her information by typing on the keyboard.

Output Device1:
Printer can print all the information of the user.

Output Device2:
Monitor: Information will be displayed on the monitor

(c) Air traffic control system

Input Device1:
Microphone: The controller/pilot will give instruction through the microphone and it will get to the user at the other end

Input Device2:
Keyboard. To send message from one end to another.

Output Device1:
Speaker: The controller/pilot will hear instruction coming from the other end through speaker.

Output Device2:
Monitor: The controller/pilot will able to see the map on the monitor.

1.5

(d) Worldwide personal com

Input Device1:
Microphon

Input Dev
C

(d) Worldwide personal communications system

Input Device1:

Microphone. You can communicate through voice and microphone can be used.

Input Device2:

Camera / Web cam

You can also communicate through sharing videos and live session. For example: Facetime Skype.

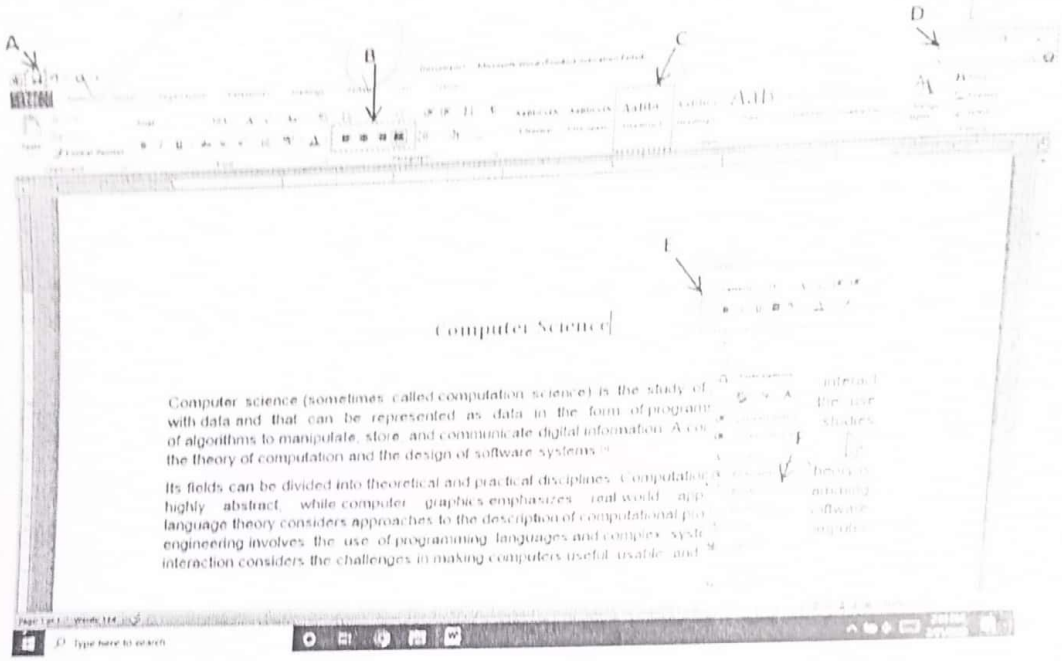
Output Device1:

Monitor. The picture or video will be available to the other user on the end through monitor.

Output Device2:

Speaker. You can hear voice of the person with which your are communicating eg: Skype, Facetime, Whatsapp

Question 2: Consider the following interface and labels.



According to Fitt's Law which regions of the screen (Labeled as A, B, ...) rank in order of accuracy to target with reference to cursor position. (Rank 1 as easiest or most accurate) (12 Points)

Rank	Label	Reason
1	E	The E point has the smallest distance from the cursor point. And the size of the point is big
2	E	The distance is small and the size of the target is big but smaller than A
3	F	The distance is small and the size is also very small.
4	B	The distance is small and the size is also very small.
5	D	The distance from cursor to D point is large and the size is also very small.
6	A	The distance from cursor to A point is larger than D point and the size of icon is very small.

Question3: What can a system designer do to minimize the memory load of the user? Give at least two options. **(4 Points)**

→ First of all the designer should increase the capacity of storage of the system.
→ Secondly, there should be a system for notification for the user to tell him/her that after adding this data you will get this space on the system.

Question4: A typical computer system comprises a QWERTY keyboard, a mouse and a color screen. There is usually some form of loudspeaker as well. You should know how the keyboard, mouse and screen work. If you were designing a keyboard for a modern computer, and you wanted to produce a faster, easier-to-use layout, what information would you need to know and how would that influence the design? (2 Points)

Firstly I will want to know ~~that~~ about the comfort level of users with the qwerty keyboard and how it is affecting their typing speed. And then I will design the keyboard in different pattern so the users get easier to use it and their typing speed will increase.