Fast**National University of Computer and Emerging Sciences, Karachi  
Department of Computer Science**

**Spring 2021, Midterm 2  
 April 23, 2021, 08:15 am – 09:15 am**

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| **Course Code: CS 422** | **Course Name: Human Computer Interaction** | |
| **Instructor Name : Mr. Behraj Khan** | | |
| **Student Roll No:** | | **Section No:** |

* Return the question paper.
* Read each question completely before answering it. There are **8 questions and** **1 page only.**
* In case of any ambiguity, you may make assumption. But your assumption should not contradict any statement in the question paper.
* Each question carries five points

**Time**:  60 minutes.                                                                                                **Max Marks**: 40 points

Q1. How cognitive psychology helps in designing a learning application for kindergarten. As we discussed about the interdisciplinary fields of HCI in class, cognitive psychology can be considered as an interdisciplinary field of HCI? Justify for Yes/NO.

Sol: Cognitive psychology helps in understanding the user like dislike and the way they perceive information’s which are helpful in development of an application. This reason categorize it as interdisciplinary field of HCI.

Q2. How the mentioned scenario in Q1 can be mapped into abowed and beale framework? How the gulf of execution and evaluation can be minimized while designing the application asked in Q1.

Sol: User action will be transformed into system understandable language and system change should be displayed in user understandable language. The interface will play an intermediate role. So if problems in interface then problems in interaction.

Q3. Write the equation for Fitts’ law. Suppose the interface of learning application mentioned above in question 1 uses a mouse as input device. Will there be any change in movement time if we reduce the distance between icons by a fraction of 1/4 between the buttons in the interface while also increasing the size by the same fraction of the buttons and change the input from mouse to touch screen? Explain each term of the formula also. Explain/ justify your answer.

Sol: a + b log2 (D/S + 1), No change

Q4. The concept of recognition or recall will be helpful in design of above mentioned application? Justify your choice for selection.

Sol: Recognition

Q5. As we discussed in class that human has unlimited size of memory, then why forgetting occurs? Differentiate pro-active and retro-active interference with one example each.

Q6. If students are drawing the red solid triangle by your designed application (above mentioned in Q1). What will be the interaction terms?

Sol: domain – the area of work under study

e.g. graphic design

goal – what you want to achieve

e.g. create a solid red triangle

task – how you go about doing it  
 – ultimately in terms of operations or actions

e.g. … select fill tool, click over triangle

Note …

* + traditional interaction …
  + use of terms differs a lot especially task/goal !!!

Q7. Consideration of ergonomics is mandatory in case of the above mentioned application in Q1. Justify for Yes/No.

Sol: Yes, because physical characteristics of interaction will be considered.

Q8. Sometimes we attend a lecture, but immediately after the class we have no idea about the lecture topic. What is the reason of the mentioned problem? Sometimes we do remember immediately after the class but we are unable to recall because the information aren’t the part of our long term memory. How the information can become the part of long term memory?

Sol: because attention missing, because rehearsal is missing, by rehearsal.