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

**Spring 2021, Final Exam  
 June 19, 2021, 10:00 am – 01:00 pm**

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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** **2 pages 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 15 points
* The paper is subjective. Write the answers only on answer sheet.

**Time**:  180 minutes.                                                                                                **Max Marks**: 120 points

* 1. As a computer scientist you are asked by your instructor to develop an application that can help blind people in learning, how will you start? How will you implement multimodality? Is cultural probe will be helpful in requirement gathering? If yes, then how? Is iconic channel will be helpful? justify
  2. Which contrast will be helpful for the above scenario in case if user is reading? Which input channel will help in reading?
  3. Discuss about the type of channel which will be used for notifying the user about the learned listen or bookmark for the above given scenario.
  4. Mention the type of interaction paradigm which you have used in your semester project. Rationalize the selection criteria about chosen paradigm.
  5. Discuss about the synthesizability type of your chosen interaction paradigm. Justify your argument by drawing a window screen **(except login/sign up)** of your project.
  6. Which type of reasoning would be required for user during interaction with particular screen (as per **part b** constraint) of your project.
  7. You are asked by your instructor to design an online media player which will be used as plugin for google chrome. How will you map this problem to Norman’s interaction model?
  8. How multimodality will be applied If you are implementing the download feature for the media player in (**part a**).
  9. Mention the metaphors which you have used in your semester project. List down at least five. Rationalize each metaphor.
  10. Differentiate between process-oriented and a structure-oriented design rationaletechnique? Would you classify psychological design rationale as process or structure oriented? Why?
  11. Differentiate between recognition and recall. Explain how recognition and recall is applied in your semester project.
  12. Why forgetting occurs how can it be minimized. Describe about the process of moving information from sensory memory into long term memory.

1. 1. Highlight the five features of direct manipulation interface from your semester project perspective.
   2. Discuss the ways in which a full-page word processor is or is not a direct manipulation interface for editing a document using Shneiderman’s criteria. What features of a modern word processor break the metaphor of composition with pen (or typewriter) and paper?
   3. Write down the two principles of **appropriate intelligence** followed by ***Context-aware*** applications.
2. 1. Justify, how human and computer are considered as obvious materials in Human-Computer Interaction.
   2. Draw a window screen of your semester project where you have applied the **“*knowing what you can do*”** design golden rule.
   3. how you considered the minimization of errors during interaction with your deployed semester project application from user perspective.
   4. How you applied the concept of **“affordance”** in your semester project.
   5. Differentiate between **“task conformance”** and **“task adequacy”**. How these concepts applied in your semester project?
   6. Differentiate between **“user pre-emptive”** and **“system pre-emptive”** dialogues. How these concepts applied in your semester project?
   7. How **“*adaptability”*** and **“adaptivity”** enhance user satisfaction? draw a window screen of your semester project where you have applied any of the mentioned term.
   8. How **“Guessability”** principle will provide a usability specification for an electronic meetings diary or calendar. First identify some of the tasks that would be performed by a user trying to keep track of future meetings, and then complete the usability specification assuming that the electronic system will be replacing a paper-based system. What assumptions do you have to make about the user and the electronic diary in order to create a reasonable usability specification?
   9. What was the problem with the synthesis example comparing a command language interface with a visual interface? Can you suggest a fix to make a visual interface really immediately honest?

Good Luck