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ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)

Department of Computer Science and Engineering (CSE)

MID SEMESTER EXAMINATION

WINTER SEMESTER, 2017-2018

DURATION: 1 Hour 30 Minutes

FULL MARKS: 75

CSE 4739: Human Computer Interaction

Programmable calculators are not allowed. Do not write anything on the question paper.

There are **4 (four)** questions. Answer any **3 (three)** of them.

Figures in the right margin indicate marks.

1. a) Detecting fake post in the social networking sites is one of the major challenges for the researchers. What are the interrelated aspects of Human-Computer Interaction that the researchers should consider in this case? Explain briefly. 13
 - b) You are employed by a software company that develops games for tablet computers (e.g., Apple's iPad). The senior developer has tasked you to help with the development of the tablet version of the classic Whac-A-Mole game. In the game, the screen will show a number of holes, and moles will pop up from the holes at random. Players will, using touch, hit the moles in the head to force them back into their holes as fast as possible to maximize their score. The development team needs your help particularly in designing the behaviors of the moles. 12
- Briefly describe the memories, processors, and operators that will determine how much delay should be added between each mole popping up, based on the Model Human Processor
2. a) Describe the Fitts's law. Based on the scenario described in Question 1. (b), make a calculation applying Fitts's law to provide your team with a rough estimate of the time it will take the player to respond to each mole along with any assumptions you make. 9
 - b) Suppose you want count voting by the attendees in a classroom to evaluate the class performance. You have to track different color amount with intensities and transfer them in a system that will perform data visualization. How do you apply different color for interaction? 8
 - c) Briefly explain with example the articulation, performance, presentation, and observation analysis from the interaction framework given in Figure 1. 8

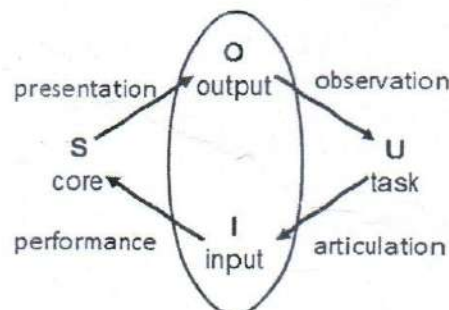


Figure 1: An interaction framework

3. a) What do you mean by 'gulf of execution' and 'gulf of evaluation' while doing interaction through computers? Explain with example. 10
- b) Briefly describe four different interaction styles used to accommodate the dialog between user and computer. 8
- c) Explain human ergonomics and design implications with example. 7
4. a) Suppose you want to design a communication tool for an autistic child. An autistic child may have articulation, performance, presentation, and observation problems. But this tool will help the child to communicate with others. Do the followings: 10
- i. List the usability and user experience goals of the system.
- ii. Sketch a prototype of the communication tool.
- b) What is interaction design? Briefly explain the four basic activities of interaction design. 5
- c) Explain Norman's design principles with examples. 10