



MID SEMESTER EXAMINATION

1ST SEMESTER 2021/2022 ACADEMIC YEAR

DATE: OCTOBER 2021

COURSE CODE: IT403/CS408

COURSE TITLE: HUMAN COMPUTER INTERACTION

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INSTRUCTIONS TO CANDIDATES

PART A

FOUR QUESTIONS ANSWER TWO

Question 1

- a) The research goal of the human-computer interaction is to produce a system that can be used easily and is secure. It will be able to increase global productivity and the security of an organisation. Explain with an example, how this can be achieved.

AN, (7)

- b) Discuss the two types of mental models that users employ when interacting with devices

AP (5)

- c) In any interface, the response to mark or certify the success or completion of a particular task is very important. Differentiate between the primacy, recency and closure effects of how information can be memorized

AN (8)

- d) You would have noticed by now that most input devices require the visual abilities of users. This would mean that users with visual impairments would find it quite impossible to use these devices. Elaborate on the two alternative devices that does not solely depend on visual abilities

AP (5)

TOTAL[25]

Question 2

- a) The psychology discipline of Human Computer Interaction focuses on the research of social structures and how computers can influence the work habits of an individual. Briefly explain the four essentials of social psychology

AN (8)

- b) To use our memory to the best of its ability, we need to understand and find ways to overcome its limitations. Elaborate on the three forms of the human memory indicating their usage and importance.

AN (7)

- c) Briefly explain with example why sound is used in the computer system

AP (5)

- d) Colour plays an important role in determining the identity and shape of an object. Briefly explain the three components of colour.

AP (5)

TOTAL[25)

Question 3

- a) In the human memory, knowledge is arranged in a very systematic and structured manner. Discuss the three forms of how knowledge is represented.

AP (7)

- b) The Human-Computer Interaction (HCI) involves two main entities, these are the human entity and the computer entity. To help in designing a usable computer system, we need to understand the human aspects from the cognitive, social, and organisational perspectives. Assuming you are the lecturer for the day, explain stating the difference

between these three (cognitive, social, and organisational) perspectives.

AN (8)

- c) Examples of sounds are voices in conversation and music. Too much sound would only serve as a disturbance to users. Explain briefly **five (5)** applications that are suited to use sounds as a form of reactive response.

AP (5)

- d) Briefly explain the four factors that affect keyboard usability.

AN (5)

TOTAL[25]

Question 4

- a) Discuss the five (5) factors that influence conversation as a form of human communication. **AN (8)**

- b) When designing a system to support group communication in an organisation, there is a number of issues that need to be taken into consideration. Explain five of these considerations **AP (5)**

- c) The main goal of the Human-Computer Interaction is to produce a system that is easy and safe to be used, apart from being able to function well. This computer system should not just be easily usable, but also easily assembled, studied and maintained. Discuss stating at least, one example of the usability goals **AN (7)**

- d) The use of touch screens enables simple and speedy interaction. Touch screens are also intuitive, making it suited for use by the public. However, touch screens have a number of disadvantages. Discuss these disadvantages. **AP (5)**

TOTAL [25]

PART B

TWO QUESTIONS ANSWER ALL

Question 1

a)

The success of the system depends on the depth of difficulty that is faced by users to study and use the system. It is normally assumed that users are able to learn everything from documentations and guidance books. But, in reality, not many users refer to these guide books or documents. Briefly explain the problems faced by users in the process of learning a new system **CR (8)**

b) Discuss the differences between usability and functionality

EV (5)

c) c) To help in designing a usable computer system, there are three (3) major factors from human perspective that needs to be understood. Elaborate on these factors

EV (7)

d) When designing an interface, graphical representation is used to represent real objects on the computer display. These representations help users in developing expectations and understanding the functions of the representation. Briefly explain the characteristics of a good interface design **CR (5)**

TOTAL[25]

Question 2

a) Long-term memory is the memory area that is used to store information for a longer period. It does not have any limitations in storage load. This means that we will be able to remember a lot of information for a long period of time. However, forgetfulness does occur. With your knowledge in HCI. Explain to your younger brother how the forgetfulness phenomenon occurs. **CR (8)**

- b)** All conversations solely depend on their context. Elaborate with at least one example the context of a conversation **EV (5)**
- c)** In HCI research, some factors have been identified as being a limitation to human memory, State and explain these factors?
 EV (7)
- d)** Briefly explain the steps that can be taken to overcome these limitations identified in (c) above. **CR(5)**

TOTAL [25]