



ACCRA INSTITUTE OF TECHNOLOGY

The University of the Future

MID TRIMESTER EXAMINATIONS

MAY 2022 TRIMESTER

DATE: AUGUST 2022

COURSE CODE: CS408/IT403

COURSE TITLE: HUMAN COMPUTER INTERACTION

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COURSE OUTLINE (MAIN TOPICS)		QUESTION NO.
MajorTopic-1	Introduction to HCI	Q1A Q3A Q4D
MajorTopic-2	The Human Factor of HCI: Physical	Q2A Q2C Q4A Q4B Q5C Q5D
MajorTopic-3	The Human Factor of HCI: Social	Q1B Q1C Q4C Q5A
MajorTopic-4	The Human Factor of HCI: Mental	Q2B Q3B Q3C Q5B
MajorTopic-5	Input Technology	Q1D Q2D Q3D
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PART A
THREE QUESTIONS ANSWER TWO

Question 1

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

Major Topic 1: Introduction to HCI	Blooms Designation AN	Score 7
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- b) Discuss the five (5) factors that influence conversation as a form of human communication.

Major Topic 3: Social Aspect of HCI	Blooms Designation AN	Score 7
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- c) When designing a system to support group communication in an organisation, there are a number of issues that need to be taken into consideration. Explain five of these considerations

Major Topic 3: Social Aspect of HCI	Blooms Designation AP	Score 6
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- 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.

Major Topic: Input Technology	Blooms Designation AP	Score 5
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TTOTAL

SCORE:25

Question 2

a) The Human-Computer Interaction (HCI) involves two main entities; the human and the computer. 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.

Major Topic2: Human Factor Physical	Blooms Designation AN	Score 7
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b) In the human memory, knowledge is arranged in a very systematic and structured manner. Discuss the three forms of knowledge representation.

Major Topic 4: Human Factor-mental	Blooms Designation AP	Score 7
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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.

Major Topic2: Human Factor Physical	Blooms Designation AP	Score 6
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d) Briefly explain the four factors that affect keyboard usability.

Major Topic 5: Input Technology	Blooms Designation AN	Score 5
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TOTAL SCORE: 25

Question 3

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.

Major Topic 1: Introduction to HCI	Blooms Designation AN	Score 7
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b) 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 is memorized.

Major Topic4: The Human Factor- Mental	Blooms Designation AN	Score 7
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c) Discuss the two types of mental models that users employ when interacting with devices

Major Topic4: The Human Factor- Mental	Blooms Designation AP	Score 6
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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

Major Topic 5: Input Technology	Blooms Designation AP	Score 5
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TOTAL SCORE:25

PART B

TWO QUESTIONS ANSWER ALL

Question 4

- a) The success of a 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 documentation and guidance books. Nevertheless, in reality, not many users refer to these guidebooks or documents. Briefly explain the problems faced by users in the process of learning a new system.

Major Topic2: The human Factor- Physical	Blooms Designation EV	Score 7
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- b) 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

Major Topic2: The human Factor- Physical	Blooms Designation EV	Score 7
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- c) 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

Major Topic3: The human factor-Social	Blooms Designation CR	Score 6
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- d) Discuss the differences between usability and functionality

Major Topic 1: Introduction to HCI	Blooms Designation EV	Score 5
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TOTAL SCORE:25

Question 5

- 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

Major Topic 3: Social Aspect of HCI	Blooms Designation CR	Score 7
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- 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

Major Topic4: The Human Factor-Mental	Blooms Designation EV	Score 7
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c) All conversations solely depend on their context. Elaborate with at least one example the context of a conversation

Major Topic2: The human Factor-Physical	Blooms Designation EV	Score 6
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d) Colour plays an important role in determining the identity and shape of an object. Briefly explain the three components of colour.

Major Topic2: The human Factor-Physical	Blooms Designation CR	Score 5
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TOTAL SCORE:25