



Final Assessment Test (FAT) - May 2024

Programme	B.Tech.	Semester	WINTER SEMESTER 2023 - 24
Course Title	HUMAN COMPUTER INTERACTION	Course Code	BCSE415L
Faculty Name	Prof. Nivethitha V	Slot	B1+TB1
		Class Nbr	CH2023240501478
Time	3 Hours	Max. Marks	100

General Instructions:

- Write only Register Number in the Question Paper where space is provided (right-side at the top) & do not write any other details.

Answer all questions (10 X 10 Marks = 100 Marks)

- Q1. A team of designers is tasked with creating a mobile app for a healthcare provider that allows patients to schedule appointments, access medical records, and communicate with healthcare professionals securely. [10]
- Explain how they use reasoning to prioritize features and design elements that meet the diverse needs of users, including those with limited technological literacy or disabilities. (5 Marks)
 - Elaborate problem-solving strategies employed to address potential usability barriers and ensure the app is accessible to all users. (5 Marks)
- Q2. Maverick Corporation proposes an exclusive social media platform for their employees. This app facilitates the sharing of thoughts via text, images, and videos, allowing users to comment. Prepare a concise technical report for the project manager, outlining how you would undertake requirements elicitation for the detailed design of the application interface. [10]
- Q3. Environmental factors can impair users' ability to recall information necessary to operate complex computer systems. Correlating with a user interface (UI) design of your choice, examine how such disruptions can impair both short-term AND long-term memory of the user while interacting with the UI. Also, describe your choice of UI. [10]
- Q4. You work as a user experience (UX) designer for a startup company developing an online groceries purchasing app. [10]
- Systematically develop an interaction model to enhance the user experience, specifically focusing on user navigation, content interaction, and collaborative engagement? (5 marks)
 - Align this interaction model with Norman's Execution-Evaluation model, ensuring effective execution of user goals in detail. (5 Marks)
- Q5. The development manager of a website for online book-buying has asked you to carry out a heuristic evaluation of its usability. He has specifically proposed the three heuristics listed below: [10]
- * "There should be between five and nine navigation options on each page."

- "There should be a good match between the navigation buttons and the users' goals."
- "It should be easy for users to change their plans."

i) Has the manager misunderstood heuristic evaluation? Briefly justify your answer. (3 marks)
 ii) Please comment on the above three heuristics suggested by the manager. For each of the proposed heuristics, your comments should include: any theoretical justification for (or against) this heuristic, any additional evaluation steps that might be required in applying it and likely impact of such evaluation on the system design (7 Marks)

Q6. Picture a scenario where a person is accessing a secure file storage system. As part of the login [10] process, there's a captcha and an optional virtual keyboard for entering the password. The user has the choice to type their password using the regular keyboard or utilize the virtual keyboard, which allows them to click on characters using the mouse. This setup helps ensure the security of the login process.

(i) Using the Keystroke-Level Model (KLM) encoding method, estimate the time required to accomplish the login for the two different methods using both KLM physical and cognitive operators. (5 Marks)

(ii) Illustrate the heuristics used in the placement of M operator in your evaluation. (5 marks)

Q7. Consider "FeedMe", a Food Ordering App. It is a mobile application that allows users to browse [10] menus, place orders, and arrange for food delivery or pickup from restaurants or food establishments. The app offers a range of features such as menu browsing, customization of orders, payment processing, order tracking, and customer support. Users can select items from various restaurants, add them to their cart, specify preferences or dietary restrictions, and complete the order transaction electronically. Additionally, the app offers features like user reviews, ratings, loyalty programs, and discounts to enhance the user experience and encourage repeat usage.

(i) Analyze which heuristic evaluation method would be most effective for assessing the usability of the "FeedMe" app, and how would you conduct a detailed evaluation report based on this method? (5 Marks)

(ii) Outline your observations and provide suggestions, along with proposed design solutions with mock UI designs, to address any identified usability issues discovered during the evaluation. (5 Marks)

Q8. Consider the Food Ordering App "FeedMe" scenario given in question [7]. [10]

(i) Create wireframe UI designs for the chosen features of the food ordering application "FeedMe". Articulate that the components are visually appealing and bound with the HCI guidelines and principles. (5 Marks)

(ii) Justify the selection of design components based on usability, user experience, and visual aesthetics. (5 Marks)

Q9. "WebQuest" is an innovative web-based gaming application that seamlessly integrates [10] augmented reality (AR) and virtual reality (VR) technologies to deliver immersive gaming experiences directly to your web browser. With "WebQuest," players can embark on thrilling adventures, explore fantastical worlds, and engage in epic quests, all from the convenience of their desktop or mobile device.

- (i) Interpret how Schneiderman's Eight Golden Rules can be effectively applied in the design of the User Interface for "WebQuest" to improve usability (5 Marks).
- (ii) Provide a detailed analysis of the usability principles for designing a hardware controller for "WebQuest" and provide neat designs for it (5 Marks).
5. A multinational company with teams across different time zones relies heavily on groupware tools for conducting virtual meetings, sharing project artifacts, and facilitating decision-making processes. [10]
- (i) Analyze how the implementation of a groupware framework enhances collaboration within a multinational company operating across diverse time zones, particularly in terms of facilitating efficient virtual meetings (5 Marks).
- (ii) Design mock UIs for the groupware and illustrate how a groupware framework contributes to the seamless sharing of project artifacts and supports decision-making processes within a multinational company with teams distributed across different time zones (5 Marks).

