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Solution and preparation links: Last page

Prepare Assignments 1 and 2 for MSE

UNIT–I (12 hours)

Introduction, The Human, The Computer, The Interaction, Paradigms, Usability, Guidelines, Principles, Theories, Design Process

4 or 5 Marks

1. Define Human–Computer Interaction and its objectives. ★
2. Explain human input–output channels with examples. ★
3. Write a short note on ergonomics in HCI.
4. Explain the concept of paradigms in HCI. ★
5. List and explain usability principles with examples.
6. Explain the sensory memory, short term and long term memory in detail. ★
7. Explain gestalt theory in detail. ★
8. Discuss the importance of prototyping.
9. Explain the principles of screen design and layout.

6 or 10 Marks

1. Explain human input–output channels in detail and their impact on design. ★

2. Discuss the various paradigms of interaction with suitable examples. ★
3. Explain usability principles, guidelines, heuristics, and standards in detail. ★
4. Explain the different interaction styles (command, menu, direct manipulation, natural language).
5. Discuss evaluation techniques used in HCI.
6. Explain Universal Design with multi-modal interaction examples. ★
7. Explain user support systems and requirements in interactive systems.
8. Describe cultural probes and their role in interaction design.
9. Discuss navigation design and its challenges.
10. Explain the software life cycle and its relation to HCI design.
11. Explain stakeholders. Explain primary , secondary and tertiary stakeholders with examples. ★
12. Discuss Donald Norman's model in detail ★

UNIT-II (12 hours)

Models and Theories: Cognitive, Socio-Organizational, Communication Models, Task Analysis, Dialog Design, System Models, Rich Interaction

4 or 5 Marks

1. Define cognitive models with examples. ★

2. Write short notes on the GOMS model. OR Discuss GOMS Model in detail.
3. Explain cognitive architectures.
4. Define stakeholder analysis and its importance.
5. Discuss task decomposition in task analysis.
6. Explain communication models in HCI.
7. Write short notes on participatory design.
8. Define dialog notations.
9. Explain entity–relationship-based analysis briefly.
10. Write short notes on status–event analysis.
11. Abowd and Beale framework

6 or 10 Marks

1. Explain cognitive models in detail with examples. ★
2. Discuss socio-organizational issues in HCI with case examples.
3. Explain communication and collaboration models with examples. ★
4. Explain dialog design and notations in detail. ★
5. Explain task analysis methods and their uses.
6. Compare task decomposition and knowledge-based analysis.
7. Explain different models of system behavior with examples.
8. Discuss modeling rich interaction using sensor-based systems.
9. Explain the role of requirements capture in socio-organizational context.

10. Discuss face-to-face communication vs. text-based communication in HCI.

12. Discuss Task Action Grammar(TAG) with Example. ★

13. Discuss Keystroke Level Model (KLM) in detail. ★

14. Explain Buxton's 3-State Model with example ★

UNIT–III (12 hours)

Interaction Styles: Direct Manipulation, Virtual Environments, Menu Selection, Dialog Boxes, Command & Natural Languages, Interaction Devices, Collaboration & Social Media

4 or 5 Marks

1. Define direct manipulation and its features. ★
2. Explain the advantages of menu selection.
3. Discuss the importance of dialog boxes.
4. Compare command language and natural language interaction.
5. Explain the need for social media participation.
6. Write short notes on pointing devices.
7. Explain touch screens as an interaction device.
8. List advantages and disadvantages of natural language interfaces.
9. Discuss the role of form filling in user interface design.
10. Write short notes on collaboration tools.

6 or 10 Marks

1. Explain direct manipulation interfaces and their limitations. ★
2. Discuss virtual environments and immersive interaction in HCI.
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3. Compare direct manipulation, menu selection, and command language styles.
4. Explain dialog boxes and their design guidelines.
5. Explain natural language interaction in HCI with examples. ★
6. Discuss interaction devices for VR and AR systems. ★
7. Explain collaboration and social participation in modern HCI systems.
8. Discuss social media as a platform for user interaction and feedback.
9. Compare the use of form filling and dialog boxes with examples.
10. Discuss the importance of device diversity in interaction design.

UNIT–IV (12 hours)

Design Issues: Quality of Service, Function vs. Fashion, Documentation, Help, Information Search & Visualization, Groupware, Ubicomp, AR, WWW

4 or 5 Marks

1. Define Quality of Service in HCI.
2. Explain balancing function and fashion.
3. Write short notes on user documentation.
4. Explain online help systems with an example.
5. Define hypertext and hypermedia.
6. Explain challenges of ubiquitous computing. ★
7. Write short notes on augmented reality.

8. Explain information visualization briefly.
9. Write short notes on groupware. ★
10. Explain multimedia elements in the WWW.

6 or 10 Marks

1. Explain Quality of Service issues in interactive system design.
2. Discuss balancing usability and aesthetics in HCI.
3. Explain user documentation and online help in detail.
4. Discuss groupware and its applications in collaboration. ★
5. Explain ubiquitous computing and augmented reality with examples. ★
6. Explain hypertext, multimedia, and WWW as interaction platforms. ★
7. Discuss information search mechanisms in the WWW.
8. Explain information visualization techniques with examples.
9. Discuss case studies of ubiquitous computing applications.
10. Explain the role of universal access in WWW and multimedia design.

HCI Youtube Videos Playlist:

https://www.youtube.com/watch?v=uB9LaBIACRs&list=PLQ-nEJNYIEV1CfTcLCx_S7D2of3QAsvTT

Solution : 6 or 10 Marks Questions from All Units

Answers are **for Reference ONLY** (These are Generated using AI-**DO Not totally rely on this**) Concepts Must be prepared from book ONLY, Diagrams are not available in QA, **refer the book/Slides** for diagrams/tables/examples):

UNIT 1 :

<https://docs.google.com/document/d/1qcVl3sIn2uK1Zhd0hX7dDuw7QeQYm5TgNiGKn6nzwnM/edit?tab=t.0>

UNIT 2 :

<https://docs.google.com/document/d/1l2ZwBFAtH6gKw7t0znbLeBjbYKLqbhLTtRH5Ym5svn4/edit?tab=t.0>

UNIT 3 :

https://docs.google.com/document/d/1RAnKCX1PH_-i6GwxQd1Nbomh7y0ixJwaEEWwUm0h4mU/edit?tab=t.0

UNIT 4 :

<https://docs.google.com/document/d/18RbEuo5tr5ecVjKuetUtw4mnL4ZA-0KPmipF-38FnmA/edit?tab=t.0>