VETRI VINAYAHA

COLLEGE OF ENGINEERING AND TECHNOLOGY

CS6008-HUMAN COMPUTER INTERACTION

Question Bank

AUC R-2013

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UNIT I

FOUNDATIONS OF HCI

The Human: I/O channels – Memory – Reasoning and problem solving; The computer: Devices– Memory – processing and networks; Interaction: Models – frameworks – Ergonomics – styles – elements – interactivity- Paradigms.

PART-A

1. What is HCI?
2. Who is involved in HCI.
3. What are the 5 major senses?
4. List the parts of human Eye.
5. What is meant by visual perception?
6. What are the effo ectors?
7. What are the two stages of vision
8. What is rods and cones?
9. What are the input and output channels of human?
10. What is reading?
11. What is hearing?
12. What is meant by processing sound?
13. What is touch?
14. Draw the structure of human Memory.
15. What is sensory memory?
16. What is long term memory? And mention its types
17. What is Short term memory? And mention its types
18. What is semantic memory?
19. Define Moore's law.
20. What is forgetting?
21. What is retrieval?
22. Differentiate deductive reasoning, inductive reasoning and abductive reasoning
23. What is gestalt theory?
24. What is problem space theory?

25. Mention the types of error?

26. What is meant by Batch processing?

27. Define Richer interaction.

28. What are text entry devices available in computer?

29. What is meant by chord Keyboards.

30. What is jaggies and anti-aliasing?

31. Define eye gaze

32. What is meant by bit map display?

33. Define Digital paper.

34. Mention the health hazards of CRT

35. Mention 7 stages of Donald norman's model in interaction?

36. What is execution and evaluation loop

37. What is ergonomics

38. List out common interaction styles

39. What is WIMP? list its elements

40. Define context of interaction.

41. What is meant by agent based interfaces?

42. What are paradigms and give examples

43. What is metaphor

44. What is ubiquitous computing?

PART B

1. Explain in detail about human input and output channels

2. Explain in detail about human memory systems?

3. Explain in detail about Reasoning and problem solving?

4. Explain in detail about Gestalt theory and problem space theory?

5. Explain in detail about text entry, positioning and pointing devices with suitable examples?

6. Explain in detail about display devices?

7. Explain in detail about different types of memory, storage format and method of access?

8. Explain in detail about finite processor speed and interactive performance?

9. Explain in detail about networked computing?

10. Explain in detail about models of interaction?

11. Explain in detail about ergonomics?

12. Explain in detail about interaction styles?

13. List the elements of the WIMP interface in details.

14. Explain in detail about paradigms

UNIT II

DESIGN & SOFTWARE PROCESS

Interactive Design basics – process – scenarios – navigation – screen design – Iteration and prototyping. HCI in software process – software life cycle – usability engineering – Prototyping in practice – design rationale. Design rules – principles, standards, guidelines, rules. Evaluation Techniques – Universal Design.

PART A

1. State the golden rule of design.
2. What is meant by interaction design process?
3. Mention the process of design
4. List the main focus of user.
5. What is "know your user"?
6. What is meant by Navigation design?
7. List screen design tools
8. What are the tools used for layout design.
9. What is meant by scenarios
10. What is meant by linearity?
11. What is meant by interaction and prototyping?
12. What is grouping and structure
13. What are the elements of design model?
14. List the principles of a software design in HCI.
15. What are the activities involved in waterfall model?
16. Define model of software life cycle.
17. What is vertical partitioning?
18. What is usability engineering
19. Mention the parts of usability specification for VCR
20. List some ISO usability standards 9241
21. Differentiate throw away prototyping and incremental prototyping
22. What are techniques used for prototyping
23. What is meant by learnabililty, flexibility and robustness?
24. What is meant by task Migratability?

25. Define under lying theory.

26. Give benefits of design rationale

27. List out types of design rules

28. List out Shneiderman's 8 Golden Rules of interface design

29. List out Norman's 7 Principles for transforming difficult task in to a simple one

30. What is goal of evaluation

31. Define cognitive walkthrough

32. What is Heuristic Evaluation

33. What is meant by model based Evaluation

34. List different styles of Evaluation

35. Define automatic analysis tools

36. What types of test available in analysis

37. What is think aloud

38. Mention about query techniques

39. What are the approaches present for user support

40. Define impairment

41. Difference between multi modal and multi media

42. How to support user support systems.

PART B

1. Define Design? List and explain the golden rules of design.

2. Explain in detail about user focus.

3. Explain in detail about process of design with suitable examples

4. Explain in detail about the followings

a. Scenario

b. Navigation design

c. Screen design

5. Explain in detail about global structure hierarchical organization and dialog?

6. Explain in brief about Screen-based controls? Give the guidelines for selecting the proper controls in screen design.

7. Explain in brief about Screen design layout? Give the guidelines for designing the proper layouts.

8. Discuss the important human characteristics which have influence on interface and screen design

9. Give the brief history of screen design and State the screen design goals.

10. Discuss how a poor screen design can distract the user and what a user expects in good screen design.

11. Discuss the impact of inefficient screen design on processing time with an example

12. Explain data, architectural and procedural design principles for the software in HCI.

13. Explain iterative waterfall software life cycle and discuss various activities in each phase

14. Explain the prototyping model. How do we select appropriate Prototyping approach?

15. Explain in detail about different approaches present in prototyping involved for software development process.

16. Explain incremental prototyping through life cycle and evolutionary prototyping through life cycle

17. Explain in detail about design rationale?

18. Explain in detail about principles to support usability?

19. Explain in detail about design rules, principles and standards'

20. Explain in detail about basic categories of Smith and mosier guidelines.

21. Discuss about Shneiderman's 8 Golden Rules of interface design and Norman's 7 Principles for transforming difficult task in to a simple one

22. Explain in detail about evaluation techniques

23. Give brief discuss about universal design

24. Explain in detail about evaluation through expert analysis and evaluation through participation?

25. List the ways of choosing an evaluation methods.

26. What is meant by multi modal interaction? Explain in detail

27. What is meant by designing for diversity? Explain in detail
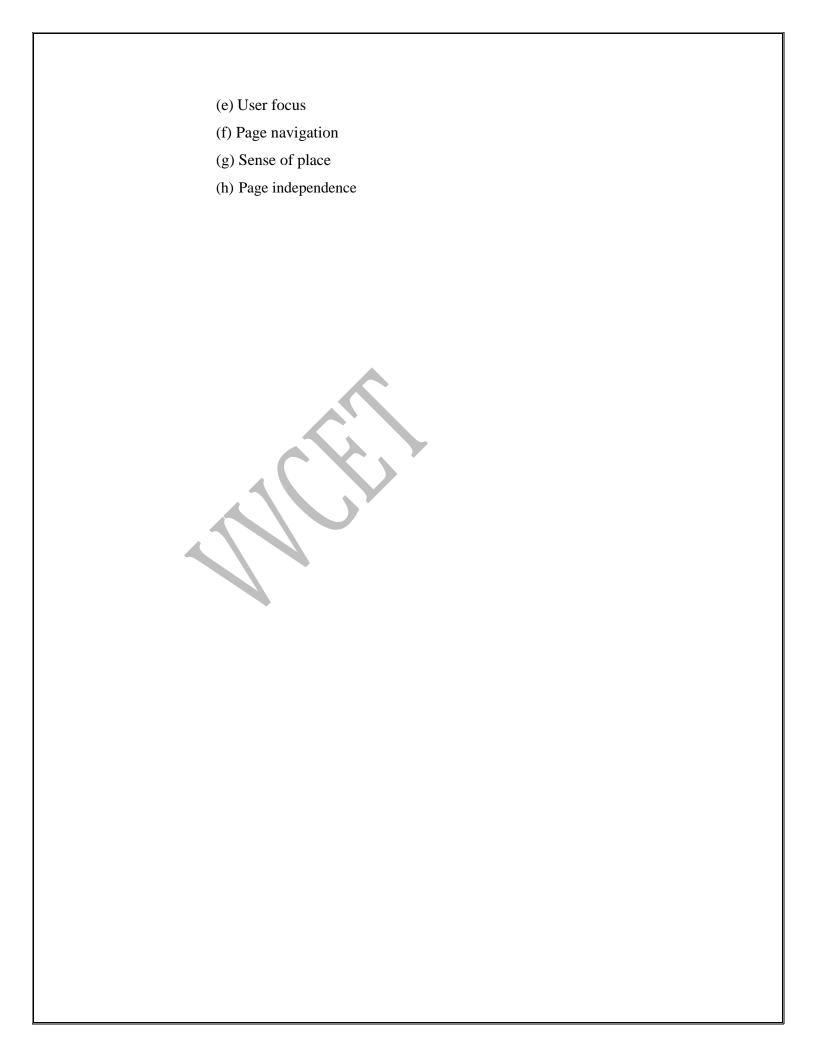
UNIT III

MODELS AND THEORIES

Cognitive models –Socio-Organizational issues and stake holder requirements –Communication and collaboration models-Hypertext, Multimedia and WWW.

PART A

1. What is meant by GOMS? give an example.
2. What is cognitive model?
3. Define cognitive complexity theory.
4. Differentiate goal and task?
5. What is CCT? And give example.
6. What is meant by Backups Naur Form? Give an example.
7. What is Task Action Grammar?
8. What is Key stroke Level Model?
9. What is meant by problem space model?
10. What is meant by interacting cognitive sub system?
11. What is critical mass?
12. What is meant by automating process workflow BPR?
13. Who are stakeholders? What roles do they play?
14. What is meant by socio technical models?
15. What is CUSTOM?
16. What is open system task analysis (OSTA)?
17. What is ethnographic approach?
18. Define speech act theory.
19. What is meant by text based communication?
20. Differentiate linear text vs. hyper text in communication.
21. What is common ground?
22. What is meant by group dynamics?
23. What is task decomposition
24. What is knowledge based analysis?
25. What is meant by entity relationship based techniques?

26. What is static and dynamic web content?

27. Define animation.

28. How to make navigation easier?

29. Define web server and web client.

30. Differentiate automatic generation and batch generation

PART B

1. Explain in detail about cognitive model and its techniques

2. (i)Explain in detail about goal and task hierarchies.

   (ii) Explain in detail about linguistic models

3. (i)What are the challenges present in display based Systems

   (ii) What are the different types of physical device models available in cognitive model?

4. Explain in detail about cognitive architecture?

5. Explain in detail about socio- technical modeling and soft system methodology

6. What are the organizational issues present in socio organization?

7. Explain in detail about capturing requirements?

8. Explain in detail about communication and collaboration models

9. Explain in detail about face to face communication?

10. Explain in detail about conversation?

11. Explain in detail about text based communication?

12. Explain in detail about Group Working?

13. How to understand hypertext? Explain rich content and delivery technology in detail

14. Explain in detail about static web content and dynamic web content?

15. Discuss the following characteristics in respect of web pages

    (a) Page size

    (b) Page rendering

    (c) Page layout

    (d) Page resolution

(e) User focus

(f) Page navigation

(g) Sense of place

(h) Page independence

UNIT IV

MOBILE HCI

Mobile Ecosystem: Platforms, Application frameworks- Types of Mobile Applications: Widgets, Applications, Games- Mobile Information Architecture, Mobile 2.0, Mobile Design: Elements of Mobile Design, Tools.

PART A

1. List some of the open source platforms used for mobile HCI development.
2. List some of the licensed platforms used for mobile HCI development.
3. What is meant by COCOA touch?
4. What is web runtimes?
5. List different application framework used in mobile HCI.
6. What is meant by web kit?
7. List out Mobile application medium types.
8. List pros and cons of SMS.
9. What is meant by mobile web site?
10. What are mobile web widgets?
11. List some game applications in mobile HCI.
12. What is mobile application media matrix?
13. Differentiate application content and utility content
14. What is productivity application content?
15. What is meant by mobile information architecture?
16. What are the ways to reduce mistakes?
17. What is meant by click streams?
18. What is meant by wireframes
19. Differentiate context prototype and HTML prototype
20. Define design myth.
21. What Is Mobile 2.0?
22. How Rich interactions kill battery life?
23. How Mobile Widgets Are the Next Big Thing

24. What is meant by interpreting design?

25. What is meant by Mobile Design Tent-Pole?

26. Define Typography.

27. List out Design tools and interface toolkits

28. Show typical flow of information on mobile devices.

PART B

1. Explain the following platforms in detail

   a. Licensed

   b. Proprietary

   c. Open Source

2. Explain the following Application Frameworks in detail

   a. Java

   b. S60

   c. BREW

   d. Flash Lite

   e. Windows Mobile

   f. Cocoa Touch

   g. Android SDK

   h. Web Runtimes (WRTs)

   i. Web Kit

   j. The Web

3. Explain in detail about Mobile Application Medium Types?

4. Explain in detail about Mobile Web Widgets and Mobile Web Applications?

5. List some of the Games that can be developed for mobiles application with real time examples

6. What Is Information Architecture? List Different Information Architecture for Different Devices.

7. Write a short note on mobile 2.0?

8. Explain the following Elements of Mobile Design in detail

   a. Context

b. Message

c. Look and Feel

d. Layout

e. Color

f. Typography

g. Graphics

9. Explain in detail about Mobile Design Tools?

UNIT V

WEB INTERFACE DESIGN

Designing Web Interfaces – Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow. Case Studies.

PART A

1. What are the Events resent in drag and drop?
2. Who are the Actors in drag and drop?
3. What is the Purpose of Drag and Drop?
4. What is meant by Placeholder Target?
5. What is meant by Insertion Target?
6. Define Boundary-based placement.
7. What is meant by Drag Rendering?
8. What is meant by Drag and Drop List?
9. What is meant by Non–drag and drop alternative?
10. What is meant by Hinting at drag and drop?
11. Differentiate Dragged object versus drop target.
12. What is meant by Drag and Drop Action?
13. Differentiate Artificial Visual Construct and Natural Visual Construct.
14. What is meant by Drag and Drop Collection?
15. What are the Challenges present in Drag and Drop?
16. What is meant by Toggle Selection?
17. What is meant by Scrolling versus paging?
18. Differentiate Collected Selection and Object Selection.
19. What is meant by Desktop-style selection?
20. What is meant by Hybrid Selection?
21. What is meant by Interaction in Context?
22. Define Fitts's Law.
23. Differentiate Hover-Reveal Tools and Toggle-Reveal Tools.
24. What is meant by Multi-Level Tools?
25. What is meant by Radial menus?
26. What is meant by Dialog Overlay?

27. What is meant by Light box Effect?

28. What is meant by Detail Overlay?

29. What is meant by Input Overlay?

30. What is meant by Dialog Inlay?

31. What is meant by List Inlay?

32. What is meant by Detail Inlay?

33. How to combine inlays and overlays?

34. What is meant by Virtual Scrolling?

35. What is meant by Inline Paging?

36. What is meant by Scrolled Paging?

37. What is meant by Virtual Panning?

38. What is meant by Zoomable User Interface?

39. What is meant by Google Blogger?

40. Define Magic Principle.

41. What is meant by Interactive Single-Page Process?

42. What is meant by Inline Assistant Process?

43. What is meant by Dialog Overlay Process?

44. What is meant by Static Single-Page Process?

PART B

1. Explain in detail about the following Drag and Drop elements

   a. Interesting Moments

   b. Drag and Drop Module

   c. Drag and Drop List

   d. Drag and Drop Object

   e. Drag and Drop Action

   f. Drag and Drop Collection

2. Explain the Purpose of Drag and Drop and list the Challenges present in Drag and Drop?

3. Explain in detail about the following Direct Selection elements

    a.   Toggle Selection

    b.   Collected Selection

    c.   Object Selection

    d.   Hybrid Selection

4. Explain in detail about the following Contextual Tools elements

    a.   Interaction in Context

    b.   Contextual Tools

    c.   Always-Visible Tools

    d.   Multi-Level Tools

    e.   Secondary Menu

5. Differentiate between Hover-Reveal Tools and Toggle-Reveal Tools

6. What are unavailable menu choices, toggled menu items and mark toggles.

7. Explain in detail about Dialog Overlay, Detail Overlay, and Input Overlay?

8. Explain in detail about Dialog Inlay, List Inlay, and Detail Inlay?

9. Explain in detail about virtual pages?

10. Explain in detail about Process flow?