give me the ans for questions included in both the files

Here are the answers to the viva/oral questions included in both files:

LP-1-HCI Oral Questions

1. **Types of real time application of HCI:**
   Real-time HCI applications include ATMs, navigation systems, medical devices, smart home interfaces, gaming consoles, and real-time collaboration tools.
2. **Types of memory:**
   - *Long-term memory*: Information stored permanently (facts, experiences).
   - *Short-term memory*: Temporary holding (current actions/thoughts).
   - *Sensory memory*: Brief sensory impressions (visual, auditory, etc.).
3. **Principles of good design and bad interface:**
   - *Good design*: Consistency, feedback, error prevention, intuitive use, clarity.
   - *Bad interface*: Lack of feedback, inconsistency, confusing navigation, unnecessary complexity, poor accessibility.
4. **Miller's Law:**
   Humans can hold about 7 ± 2 items in working memory at a time; interfaces should minimize cognitive load.
5. **Interaction styles (advantages/disadvantages, examples):**
   - *Command Line*: Flexible, fast for experts; hard for beginners.
   - *Menu-based*: Easy to navigate; may be slow for experts.
   - *Forms*: Good for data entry; can be tedious.
   - *Direct manipulation (GUI)*: Intuitive, visual feedback; limited for complex tasks.
6. **Ergonomics for UX/UI:**
   Ensures comfort, efficiency, and reduces strain while interacting with systems (e.g., font size, button placement, color contrast).
7. **How 8 golden rules are applicable to Figma designing:**
   Apply rules like consistency, feedback, error prevention, supporting undo, and reducing memory load during design of UI screens in Figma.
8. **Eight Golden Rules of Interface Design:**
   - Consistency

- Shortcut support
- Informative feedback
- Dialogs to yield closure
- Error prevention
- Easy reversal of actions
- Internal locus of control
- Reduced memory load

9. **Intranet vs Internet:**
   - *Internet*: Global, public network.
   - *Intranet*: Private network within an organization.
10. **GUI vs Web Application:**
    - *GUI*: Installed locally, rich interface.
    - *Web App*: Runs in browser, accessible anywhere.
11. **Types of UX/UI evaluation:**
    - Heuristic evaluation
    - Cognitive walkthrough
    - Usability testing
    - Surveys/interviews
12. **GOMS Model:**
    Analyses user tasks as Goals, Operators, Methods, Selection rules to predict time/steps needed.
13. **Heuristic Evaluation:**
    Experts review interface against recognized usability principles to find potential issues.
14. **Cognitive Walkthrough:**
    Evaluators step through tasks from user's perspective to discover usability obstacles.
15. **Paradigms for Interaction:**
    Includes WIMP (Windows, Icons, Menus, Pointing), touch, speech, VR/AR, tangible interfaces.
16. **Five Stage Search Framework:**
    Steps: Define, Refine, Expand, Review, Use (applies to information search tasks).
17. **Dynamic Queries and Faceted Search:**
    Dynamic queries give real-time feedback for filtering; faceted search allows filtering by multiple criteria.
18. **Designing for 10-foot interfaces principles:**
    Use large fonts, clear visuals, simple interactions for interfaces viewed from a distance (TVs, kiosks).

SPOs Viva Questions and Answers

1. **Input/output of Pass I and II of Assembler and Macro:**
    - Pass I: Input – Assembly source, Output – Symbol table, intermediate code
    - Pass II: Input – Intermediate code, Output – Machine code
    - Macro: Expands macro instructions.
2. **Preemptive and Non-preemptive Scheduling:**
    - Preemptive: CPU can be taken from running process (e.g., RR, SRTF).
    - Non-preemptive: Once started, runs to completion (e.g., FCFS, SJF).
3. **Turnaround Time, Response Time, Waiting Time:**
    - Turnaround = Completion – Arrival.
    - Response = First response – Arrival.
    - Waiting = Turnaround – Burst time.
4. **Best Scheduling Algorithm (FCFS, RR, Priority, SJF):**
    - SJF – Best average times.
    - RR – Fair for sharing.
    - Priority – Based on importance.
    - FCFS – Simple but inefficient.
5. **Best Page Replacement (LRU, Optimal, FIFO):**
    - Optimal – Least page faults.
    - LRU – Best in practice.
    - FIFO – May cause Belady's anomaly.
6. **Macro and Assembler:**
    - Macro – Expands into multiple instructions.
    - Assembler – Converts assembly to machine code, builds symbol table.
7. **Banker's Algorithm Purpose:**
    Prevents deadlocks by resource allocation check for safe state.
8. **Deadlock & Four Conditions:**
    - Deadlock – Processes wait forever.
    - Mutual Exclusion, Hold & Wait, No Preemption, Circular Wait.
9. **Examples: FCFS, RR, SJF, Priority:**
    - FCFS: Arrival order
    - SJF: Shortest first
    - RR: Time slice
    - Priority: Priority order.
10. **Examples: FIFO, Optimal, LRU Page Replacement:**

    - FIFO: Replaces oldest
    - Optimal: Not-used-longest
    - LRU: Least-recently-used.

11. **Difference: Pass I and II of Assembler:**
    - Pass I: Symbol table, intermediate code.
    - Pass II: Generates object code.
12. **Drawback of Pass I:**
    Cannot handle forward references, only intermediate output.
13. **Compiler vs Interpreter:**
    - Compiler: Translates whole program, faster afterward.
    - Interpreter: Line-by-line, slower.
14. **Parts of Assembly Language:**
    - Imperative statements: Operations
    - Declarative: Storage definition
    - Directives: Assembler commands.
15. **Process & States:**
    - Process: Program in execution
    - States: New, Ready, Running, Waiting, Terminated
16. **Paging:**
    - Divides memory into pages (logical) & frames (physical). Prevents fragmentation.
17. **Segmentation:**
    - Divides memory into variable-size segments (code, data, stack).
18. **Pages and Frames:**
    - Page: Logical unit.
    - Frame: Physical unit.
    - Mapped using page tables.
19. **Need for CPU Scheduling Algorithms:**
    - Improves CPU utilization, reduces waiting, increases throughput & responsiveness.
20. **Types of Schedulers:**
    - Long-term: Job pool selection
    - Short-term: Ready process allocation
    - Medium-term: Swaps processes in/out of memory.

Let me know if you need more detailed answers or explanations for any specific question.

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1. LP-1-HCI-_oral-questions.docx
2. SPOs_Viva_Questions_and_Answers.pdf