### **App Layout Outline**

1. **Login and Onboarding**
   * **Login/Signup Screen**: Options for Google, email, or phone number authentication.
   * **Onboarding Steps**:
     + **Personal Details**: Name, preferred language, etc.
     + **Exam Selection**: Choose the specific government exam from a list (e.g., UPSC, SSC, State PSC, Banking).
     + **Exam Date Selection**: Input the exact exam date.
     + **Daily Study Preferences**: Users specify preferred study hours and daily time commitment, which the AI uses to generate a customized roadmap.
2. **Homepage/Dashboard**
   * **User Greeting and Summary**:
     + Displays user name, motivational messages, and current progress.
     + Quick stats on weekly practice hours, recent topics covered, and progress towards the upcoming exam.
   * **Quick Access Shortcuts**:
     + **Learn Concepts**
     + **Practice Questions**
     + **Analyze Performance**
     + **Study Roadmap**
   * **Personalized Recommendations Bar**:
     + AI-generated suggestions based on recent activity (e.g., “You need more practice in Algebra. Try our targeted question set!”).
3. **Navigation Menu**
   * Persistent menu, accessible from all screens for quick navigation.
   * Icons and options for:
     + **Home/Dashboard**
     + **Practice**
     + **Concept Library**
     + **Roadmap**
     + **Performance Analysis**
     + **Settings and Profile**

### **Detailed Sections**

#### **1. Study Roadmap**

* **Dynamic Timeline**:
  + Based on the selected exam date, daily time commitment, and progress, the AI generates a roadmap with weekly and monthly goals.
  + The roadmap is dynamic, adjusting based on user performance and progress.
* **Daily Goals and Study Tasks**:
  + Each day displays specific tasks (e.g., "Practice 10 Algebra Questions" or "Revise Indian History").
* **Notifications and Reminders**:
  + Automated reminders for study sessions and revision, with options for customization.

#### **2. Learn Concepts**

* **Concept Library**:
  + Comprehensive library with subjects and topics organized by the selected exam syllabus.
  + Topics have modular sub-sections with explanations, examples, and videos (if applicable).
* **LLM-Powered Tutor Assistance**:
  + Users can ask questions on specific topics, and the LLM provides clarifications and examples.
  + Suggested follow-up questions to deepen understanding based on user interactions.
* **Practice as You Learn**:
  + Short quizzes or questions within the concept sections, so users can apply concepts immediately.

#### **3. Practice Questions**

* **Question Bank Structure**:
  + **20+ Years of Past Questions**: Organized by year, topic, and subject for easy navigation.
  + **Customizable Practice Sets**:
    - Choose questions by topic, subject, year, or at random.
    - Select the number of questions, type (MCQ, short answer, etc.), and difficulty level (easy, medium, hard).
  + **Adaptive Practice**:
    - The AI tracks performance and adjusts question difficulty, mixing in more challenging questions as the user progresses.
* **Answer Solution Timing Options**:
  + **Instant Feedback Mode**: Answer and solution shown immediately after each question.
  + **End-of-Set Review Mode**: Answer and solution provided at the end of a practice set for a comprehensive review session.
* **Custom Question Sets**:
  + Allows users to select specific topics, subjects, or difficulty levels to create a tailored question set.
  + Saves custom sets for easy access and practice in future sessions.

#### **4. Analyze Performance**

* **Performance Dashboard**:
  + Summary of key stats: topics covered, questions attempted, accuracy rate, and time spent.
* **Strengths and Weaknesses**:
  + **Topic-Level Analysis**: Highlights strongest and weakest topics, with suggestions for improvement.
  + **Difficulty-Level Insights**: Shows performance across easy, medium, and hard questions, pinpointing specific difficulty levels to focus on.
* **Custom Recommendations**:
  + Based on performance, the AI suggests practice sessions or concept reviews.
  + Reminds users to revisit weak areas periodically for memory retention.

#### **5. Memory Retention & Revision Support**

* **Scheduled Revisions**:
  + AI sets up spaced revisions for previously covered concepts and weak areas.
  + **Revision Notifications**: Alerts users to revisit specific topics or question sets at optimal intervals.
* **Customizable Revision Plans**:
  + Users can modify revision schedules, prioritize certain topics, or request additional practice for areas they find challenging.

#### **6. Exam Simulation**

* **Mock Tests**:
  + Full-length mock tests with an exam-like interface, created using past papers and AI-generated questions.
  + Timed sessions to mimic real exam conditions.
* **Performance Review Post-Test**:
  + Detailed score breakdown by section and topic.
  + Feedback on time management, accuracy, and areas for improvement.

#### **7. Settings and Profile**

* **Profile Information**:
  + Stores user information and study preferences.
  + Keeps a record of exam details, study history, and key stats.
* **Settings for Customization**:
  + Options to set preferred answer solution timing, study schedule, and notification preferences.
* **AI Interaction Feedback**:
  + Users can rate AI-generated explanations, practice questions, and insights, helping to refine the app's personalization.

### **User Flow Example**

1. **Login & Onboard**: User selects the exam, inputs exam date, and daily study preferences.
2. **Dashboard**: The user sees their roadmap with goals for the week.
3. **Learning and Practice**: They start with a concept, practice questions, then check strengths and weaknesses in the “Analyze Performance” section.
4. **Revision**: Scheduled reminders prompt spaced revision, strengthening weak areas.
5. **Mock Test**: Leading up to the exam, the user takes mock tests for practice under exam conditions.
6. **Final Weeks**: User reviews customized suggestions for last-minute improvements in weak areas.