Q1. What is Firebase? What features does Firebase offer?

Ans: Firebase is a Backend-as-a-Service (BaaS) platform developed by Google.
It helps developers build, run, and scale web and mobile applications without managing servers.

Firebase provides ready-made backend services like:

- Authentication

- Database

- Hosting

- Notifications

- Analytics

So developers can focus more on frontend and app logic.

Features:

1. Authentication

Firebase provides **secure user authentication** using:

- Email & password

- Phone number (OTP)

- Google, Facebook, GitHub login

  Easy to implement and secure.

2. Realtime Database

- NoSQL cloud database

- Data syncs in **real time** across all clients

- Works online and offline

Used for chat apps, live updates, etc.

3. Cloud Firestore

- Advanced NoSQL database

- Better structure and scalability than Realtime DB

- Supports real-time updates

Best for modern, large applications.

4. Hosting

- Fast and secure web hosting

- Free SSL certificate

- Easy deployment for React, Angular, Vue apps

5. Cloud Storage

- Store images, videos, documents

- Secure and scalable

- Integrated with authentication

6. Cloud Functions

- Run backend code without managing servers

- Automatically triggered by events
  (e.g., database update, user signup)

7. Firebase Analytics

- Track user behavior

- App performance insights

- Helps improve user experience

8. Cloud Messaging (FCM)

- Send push notifications

- Supports Android, iOS, and Web apps

9. Security Rules

- Control database and storage access

- User-based permissions