Problem statements and Solutions

Domain: Biotechnology

1. Problem: High costs of genetic testing for inherited disorders.

Solution: Offer low-cost genetic screening packages focused on preventive care, distributed via public health centers.

2. Problem: Lack of effective diagnostics for common infections in remote areas.

Solution: Develop an affordable portable testing kit for infections, integrated with mobile reporting to track local disease trends.

3. Problem: Unmet need for bioinformatics expertise in smaller cities.

Solution: Online bioinformatics courses with a focus on agricultural and healthcare applications, subsidized for rural students.

4. Problem: Low accuracy in cancer detection in rural clinics.

Solution: AI-driven cancer screening software using inexpensive, widely available imaging equipment for early detection.

5. Problem: Scarcity of trained lab technicians in rural labs.

Solution: Set up remote lab training programs with simulations for common lab processes and tele-supervision.

6. Problem: Limited affordable prenatal genetic screening.

Solution: Provide affordable prenatal genetic tests through government-sponsored health clinics.

7. Problem: Dependence on imported biomaterials for research.

Yajuvendra Chauhan

Solution: Establish a local biomaterial manufacturing center, creating accessible, cost-effective options for Indian biotech startups.

8. Problem: Poor vaccine storage in rural clinics.

Solution: Solar-powered portable refrigerators for vaccine storage, managed with IoT sensors to monitor temperature.

9. Problem: Lack of accessibility to digital health records.

Solution: Implement blockchain-based decentralized health records accessible via mobile app for rural patients and doctors.

10. Problem: Inadequate diagnostic resources for vector-borne diseases.

Solution: Deploy portable PCR-based diagnostic tools for early detection of malaria, dengue, and chikungunya.