

Low-Cost Multi-Parameter Patient Monitoring Device

SolveXBio Case Study Competition

Ingenium — IIT Indore

Competition Overview

In resource-limited environments such as rural clinics, ambulances, and remote field hospitals, access to advanced patient monitoring systems is restricted by cost and portability constraints.

This competition challenges participants to design a frugal, portable, and accurate multi-parameter patient monitoring solution without compromising feasibility.

Problem Statement

Teams must design a low-cost, portable device capable of simultaneously measuring at least three physiological parameters such as heart rate, SpO₂, blood pressure, or temperature.

Key Requirements

- Affordability using cost-effective sensors
- Portability with low-power or battery operation
- Simple data interface (LCD, mobile app, LEDs)
- Theoretical and practical feasibility

Deliverables

- Block diagram or schematic
- Component list with cost estimation
- Design justification balancing accuracy and cost

Eligibility & Team Structure

- Open to students from all backgrounds
- Teams of at least two members
- Mandatory registration via Google Form

Competition Format

- Common real-world problem statement
- Preparation, Presentation, and Q&A phases

Rules & Regulations

Internet allowed only during Preparation Phase. Plagiarism results in immediate disqualification.

Judging & Evaluation (100 Marks)

Problem Understanding	20	Clarity of core issue and constraints
Innovation	25	Novelty and creativity of solution
Feasibility	25	Practical implementability
Presentation	15	Communication and clarity
Teamwork & Q&A	15	Collaboration and defence of ideas

Awards

Top team(s) to be recognised by the jury.

Rules are subject to change at the discretion of the organisers.
Further instructions will be communicated to registered participants.