Intermediate Robotics (13-15 YRS) - Environmental Awareness & Sensor Integration

1. Have you worked with any sensors before? If so, which ones and what were they used for?
2. Can you explain how a robot might differentiate between plastic, paper, and metal using sensors?
3. What programming languages are you familiar with? Have you used any for robotics?
4. How would you design a robot that can pick up and sort litter automatically?
5. Can you describe an example of an eco-friendly robot you have seen or heard about?
6. What are some challenges you foresee in programming an autonomous robot for sorting waste?
7. How would you ensure the robot navigates correctly and doesn't get stuck in the arena?
8. Do you prefer working alone or in a team? Why?
9. How do you troubleshoot issues in a robotics project when something doesn't work as expected?
10. Why do you think environmental robotics is important for Africa?

Advanced Robotics (16-19 YRS) - Underwater Exploration

1. Have you ever built or programmed a robot before? If so, what was its purpose?
2. What do you know about underwater robotics and the challenges of operating in water?
3. How would you design a robot that can collect data from a water body while ensuring waterproofing?
4. What sensors would be needed for a robot to detect water pollution?
5. What experience do you have with mechanical design, 3D printing, or assembling robotic structures?
6. How would you program a robot to navigate underwater and avoid obstacles?
7. What power sources would be most suitable for an underwater exploration robot?
8. If your robot malfunctions during the competition, how would you troubleshoot and fix it quickly?
9. What strategies would you use to analyze and interpret the data collected by your robot?
10. Why do you want to participate in this competition, and what unique skills can you bring to your team?