PROBLEM STATEMENTS FOR RECRUITMENT 2025
(ASTC ELECTRONICS DIVISION)

PROBLEM STATEMENT 3:

Title:
Computer Cooling Fan – 3D Modeling and Animation in SolidWorks.

Background:
Computer cooling fans are essential components used to dissipate heat from processors and power units, ensuring efficient thermal management and performance. This project aims to help students understand the mechanical design, assembly, and motion of a rotating system using SolidWorks.

Objective:
Design a **computer cooling fan assembly** consisting of a fan housing, rotor with blades, and motor hub. Assemble the components with proper mates and create an animation to simulate the fan's rotational motion.

Requirements:

- Model a **square fan frame (120 × 120 mm)** with mounting holes at the corners.
- Create a **rotor** with seven blades using the circular pattern feature.
- Design a hub of diameter 25–30 mm and add a central motor cap.
- Assemble all parts using concentric and coincident mates to allow rotation.
- Perform a motion study to show the rotational motion of the fan.

Deliverables:

- Individual **.SLDPRT** files for all components (housing, rotor, cap).
- Final .SLDASM assembly file.
- A 10–20 second animation showing the fan spinning.
- One rendered image of the complete assembly.
- A short write-up (50–100 words) describing the design approach and key features used.