Model Maker

Complete one of the following:

(I) 1. Construct a model aeroplane (the use of a kit is permitted) and meet one of the following flight performances when flown:

Hand-launched glider	25 sec.
Tow-launched glider with maximum 50 m line	45 sec.
Rubber elastic-band powered	30 sec.
Engine-powered (take off within 15 sec.)	45 sec.

Control line aircraft to show a smooth take-off, three laps level flight at approximately two metres, climb and dive for landing.

2. Know the basic principles of flight, including the three axes and their effects on stability and control.

(II) 1. Build an electric or engine-powered model boat or yacht, not less than 45 cm in length (the use of kits is permitted) and show it to be capable of maintaining a straight course of not less than 23 m.

2. Explain the Archimedes' Principle.

(III) 1. (a) Build an electric slot car racer, not from a kit but a commercial body and other parts may be used. Drive it for at least 122 m on any track without stopping or leaving the slot more than four times; or

(b) Build 2 free running car of any type (kits permitted) and demonstrate that it will run for at least 18 m. Electric motors are allowed.

2. Know how track and wheelbase are measured and sketch and explain the principle of Ackerman steering.

(IV) 1. Build a coach and demonstrate that it can run behind a locomotive.

2. Build a scenic model, such as a mine, station, farmhouse, etc. The model should be built according to scale.

3. Know the signals for electric trains.