WATER CROSSINGS

There are 3 main things that stop a petrol engine from working are, no spark, no air, or no fuel.
Water crossing will affect the first 2, water shorting out the ignition system or water entering the air cleaner.
Diesels are only affected by water entering the air cleaner.

IGNITION SYSTEMS
In older petrol vehicles there is a coil, a distributor and spark plugs. Water can enter the distributor and cause shorts inside the distributor cap and under the caps of sparkplugs, water can short out the spark plug leads if there are cracks in the insulation.
Newer vehicles don't have a distributor, but still have spark plugs and leads. In some cases the spark plugs are inside the tappet covers and are protected from water. But if the leads are perished, water can still short them out. In newer vehicles there are also computers controlling the motor, gearbox, etc, which can also be affected by water.
In older vehicles silastic was used to seal the distributor cap and spark plugs. The same can be done on newer vehicles.

AIR CLEANERS
Water can enter the air cleaner and stop the air flow or be sucked in and stop the engine.
Older vehicle's air intakes were usually in the centre of the engine bay above the carburetor, it was easy to fit a piece of pipe that could be run to the back of the engine bay and not likely to pick up water. Newer vehicles have air intakes either behind the headlight or between the top of the grill and the bonnet. These air intakes are designed to ram air into the air cleaner, the trouble is that they also ram water into the air filter. The better designed air inlet systems have water traps, which remove the water before it can enter the air filter. The safest system is to have a snorkel fitted.

BEFORE CROSSING
Do you really need to drive through the water? Is there another way or a shallower crossing? Anything above doorsill height deserves caution. Vehicles can float and water can enter the cabin.
Deep water crossings should never be attempted alone, except in an emergency.
Before you enter any water, you must check the path you plan to take to check if there are any big rocks or deep holes hidden under the water and check the firmness of the bottom and the current flow.

A radiator blind prevents water being forced through the front grill, then the radiator core and flooding the engine bay.

Removing or loosening the fan belt will prevent the fan blade from being driven into the radiator and splashing water all over the engine. If you have electric fans, turn them off. Turn off the air conditioner. If the engine and transmission are very hot consider letting them cooling down before entering the water, especially engines fitted with turbos.

THE CROSSING
Enter the water slowly, then increase speed to build a bow wave and then maintain the momentum, which effectively lowers the water level around the engine and behind the vehicle.

Too fast and water could surge over the bonnet and flood the engine bay.

Don't change gear while in the water. Travel diagonally to the current flow. If you start floating, open a door and fill the vehicle with water.

AFTER CROSSING
On leaving the water, always drive a short distance with the foot brake lightly depressed to dry out the brake linings.
Upon returning home after water crossings, check the diff and gearbox oils for water contamination, especially after long or deep water immersions.