Two diode full wave rectifier

In a half-wave rectifier there is no rectification action during the -ve half cycle of the input AC voltage. Because of this the output DC level is low (0.318 VS(peak)). This limitation of a half-wave rectifier can be overcome by using two diodes and a centre-tap-transformer.

Each diode and the common load resistor RL form two independent half-wave rectifiers. Because of the centretapped secondary winding, each diode receives only half of the total secondary voltage. The opposite ends of the transformer secondary windings always have opposite polarities with respect to the centre tapwhen end A of the secondary winding is positive, the bottom end B will be negative. For the polarity shown in Fig a, the anode of D1 is positive and, hence, forward biased. Whereas, the anode of D2 is negative, and, hence, does not conduct. Current flows from the transformer(end A) → D1 → RL → back to the transformer centre-tap. This direction makes point C across the load RL as the +ve terminal of the output DC voltage. During the next half cycle, end B of transformer is +ve and A is –ve as shown in Fig b. Hence the anode of D2 is +ve and this diode conducts whereas D1 does not. Current flows from the transformer(end B) → D2 → RL → back to the transformer centre-tap. This direction of current again makes point C across the load RL as the +ve terminal of the output DC voltage