

RECTIFIER

Rectifier is an electrical device which convert or alternating current (AC) into direct current (DC) and the process of conversion of alternating current (AC) into direct current (DC) is called Rectification

Types of Rectifier

① Half wave Rectifier

② Full wave Rectifier

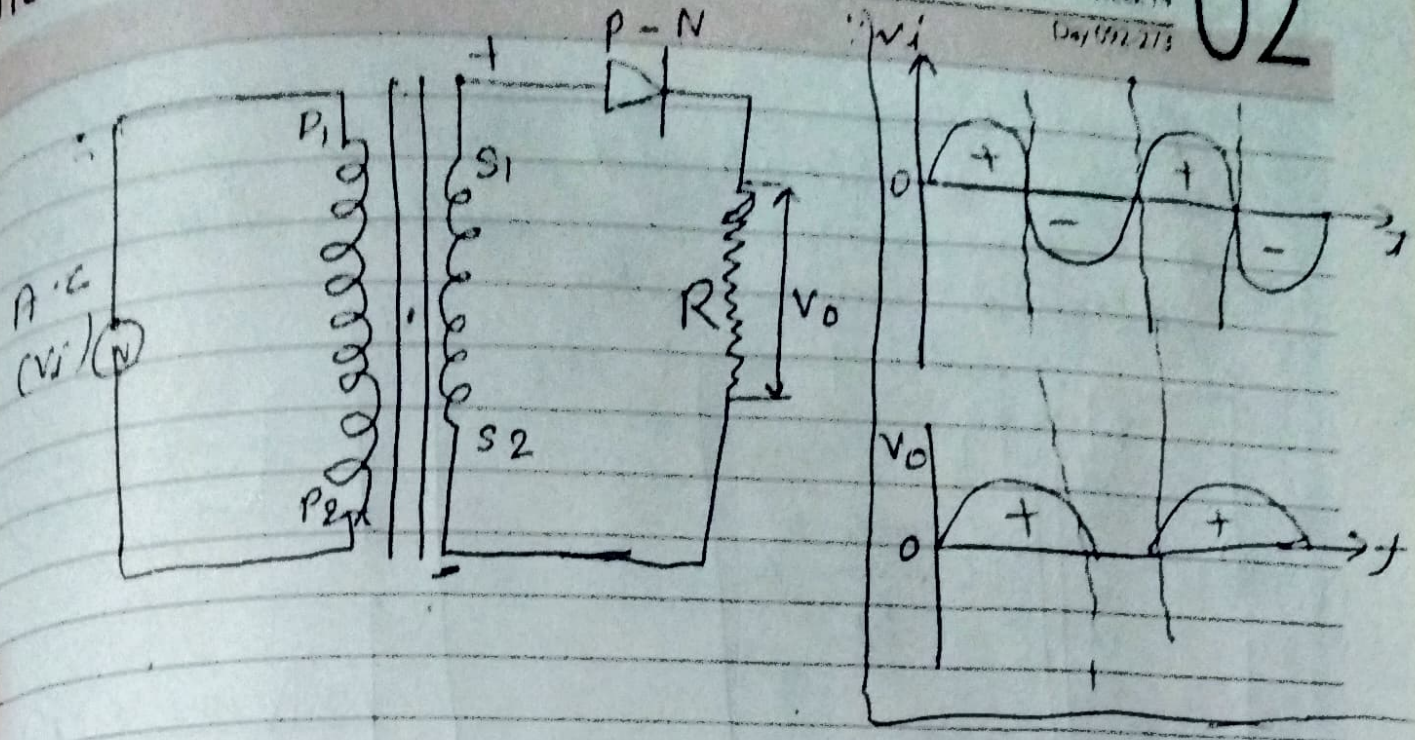
① Half wave Rectifier →

It is type of rectifier which converts positive half cycle of input AC signal into DC output signal.

Principle →

Its working is based on the principle that the P-N junction diode conducts when forward biased do not conduct when reversed biased

2010	MARCH					2010	APRIL				
Mon	1	8	15	22	29	Mon	5	12	19	26	
Tue	2	9	16	23	30	Tue	6	13	20	27	
Wed	3	10	17	24	31	Wed	7	14	21	28	



① Full wave Rectifier → It converts both half of AC into DC.

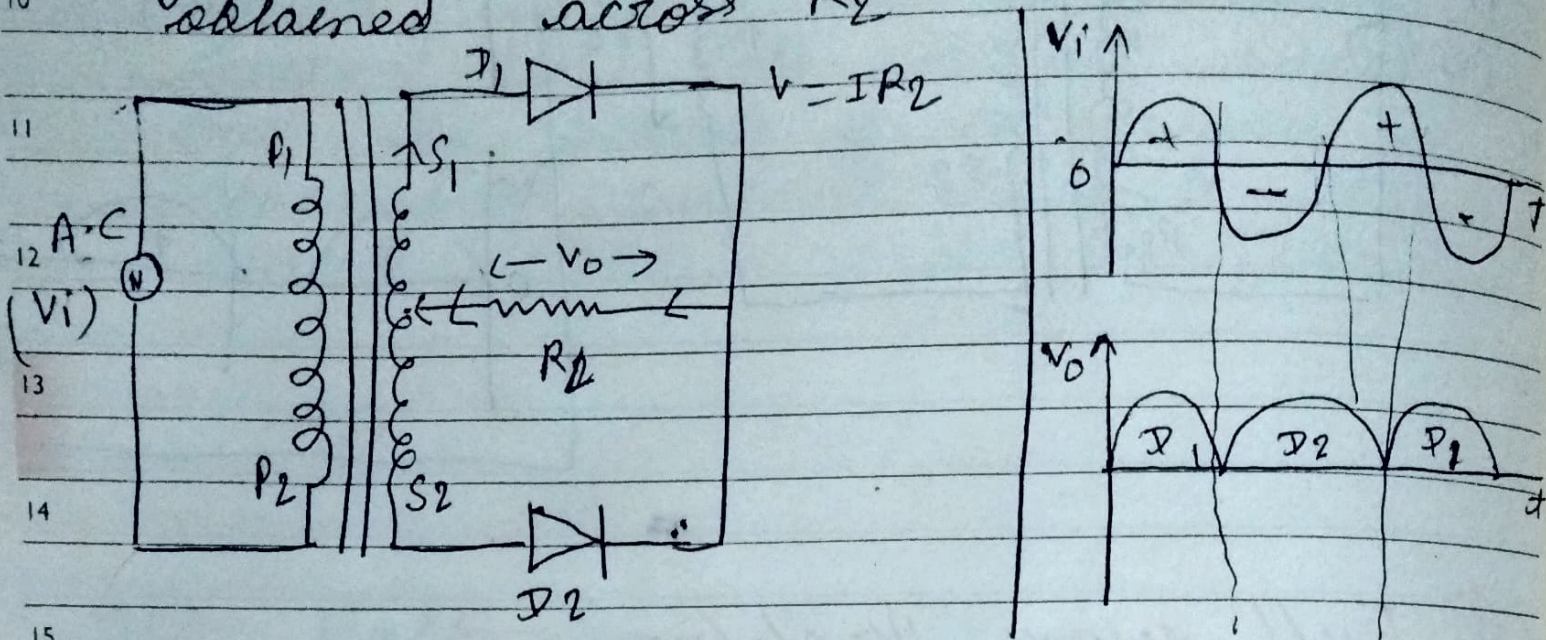
Principle → Same as that of half wave Rectifier.

Its working is based on the principle that the P-N junction diode conducts when forward biased do not conduct when reversed biased.

circuit diagram → The circuit diagram of full wave rectifier using two P-N junction diode is shown in fig. P_1, P_2 & S_1, S_2 are primary and secondary of step down central tapped

2010	MAY					2010	JUNE				
Mon	31	3	10	17	24	Mon	7	14	21	28	
Tue		4	11	18	25	Tue	1	8	15	22	29
Wed		5	12	19	26	Wed	2	9	16	23	30
Thu		6	13	20	27	Thu	3	10	17	24	
Fri		7	14	21	28	Fri	4	11	18	25	
Sat		1	8	15	22	Sat	5	12	19	26	
Sun		2	9	16	23	Sun	6	13	20	27	

Transformer. A source of alternating voltage is connected to the primary of transformer. The output voltage is obtained across R_L



Working \rightarrow

(a) During +ve half cycle of input A.C signal ~~is~~ ~~is~~ S_1 becomes +ve & S_2 becomes -ve and hence diode D_1 is forward biased and diode D_2 is reverse biased. A forward current passing through D_1 & R_L shown by arrows. No current passes through D_2 in this case due to current through R_L an output voltage is obtained across it.

Date

Name

(b) During -ve half cycle of input AC signal S_1 becomes -ve & S_2 becomes +ve hence diode D_2 is forward biased and diode D_1 is reverse biased. A forward current passing through D_2 & R_L shown by arrow. No current passes through D_1 in this case. Due to current through R_L an output voltage is obtained across it.

Thus we observe that during the whole current through R_L flows in same direction so we get unidirectional DC output signal.

