



# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)  
COIMBATORE-35

Accredited by NBA-AICTE and Accredited by NAAC – UGC with A+ Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai



## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

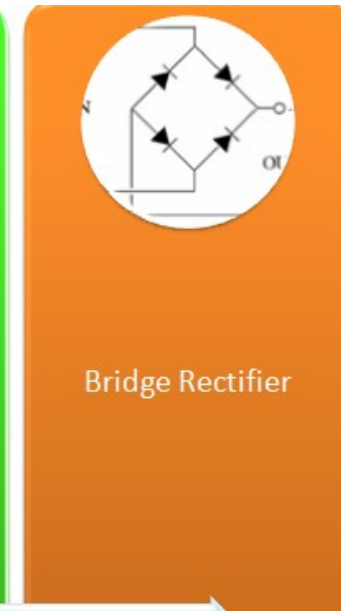
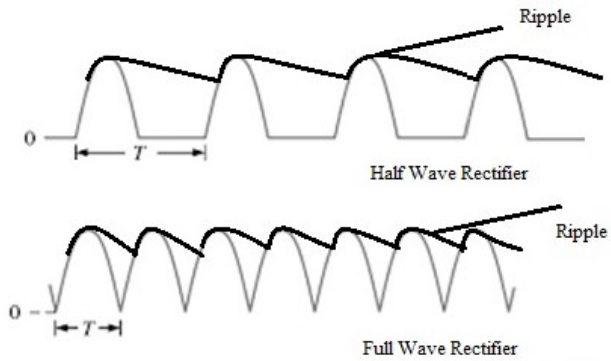
### 23EET202 / ANALOG ELECTRONICS CIRCUITS I YEAR / II SEMESTER

#### UNIT-I: PN JUNCTION DEVICE

## HALF & FULL WAVE RECTIFIER



# TOPIC OUTLINE





# Introduction

- A rectifier is an electrical device that converts alternating current (AC), which periodically reverses direction, to direct current (DC), which is in only one direction, a process known as rectification.

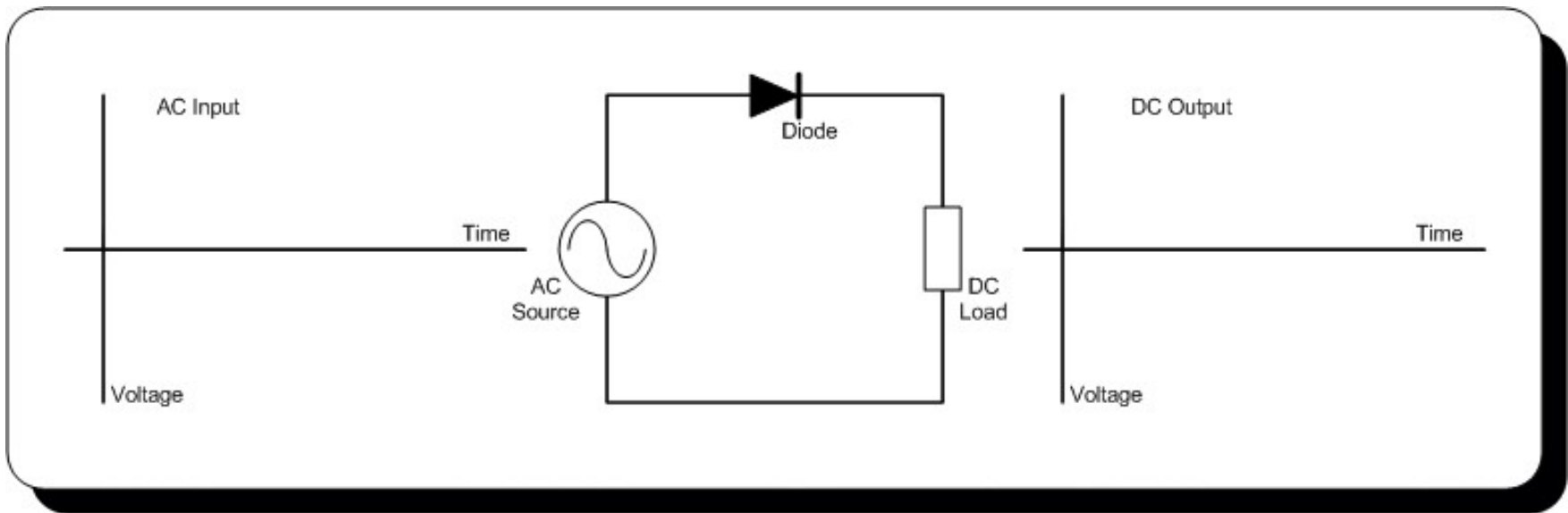


## Types of Rectifiers

- ➔ Half wave Rectifier
- ➔ Full wave Rectifier
- ➔ Bridge Rectifier

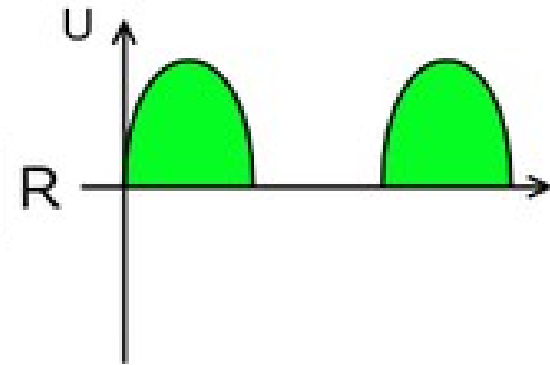
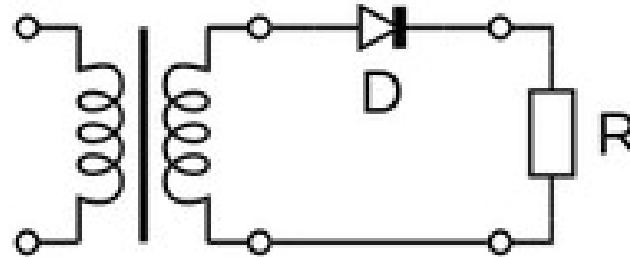
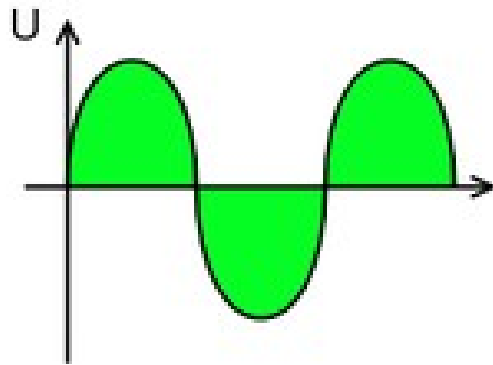


# Half wave rectifier working animation



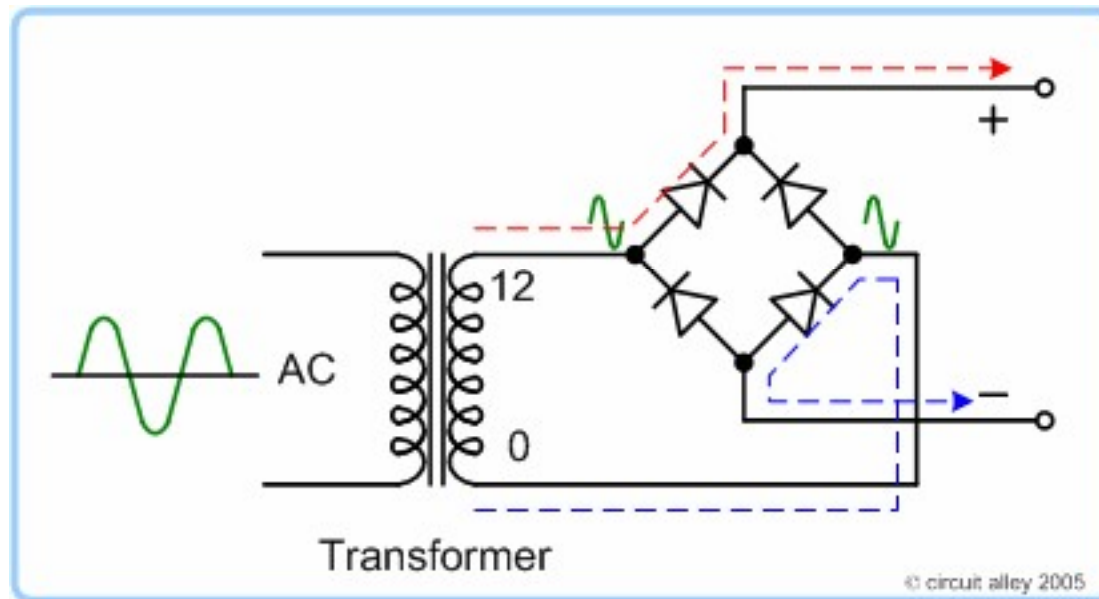


# Half wave rectifier



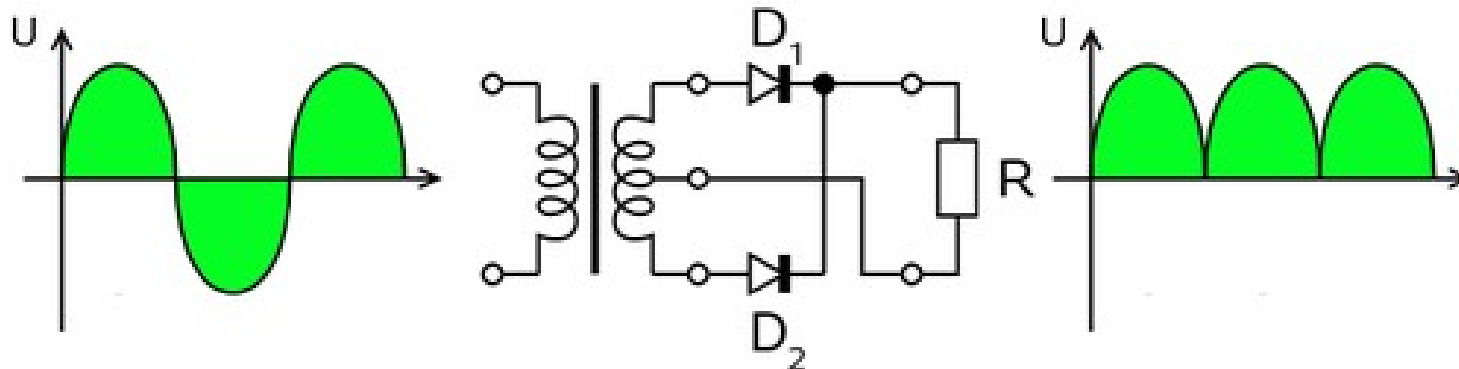


# Full wave rectifier working animation





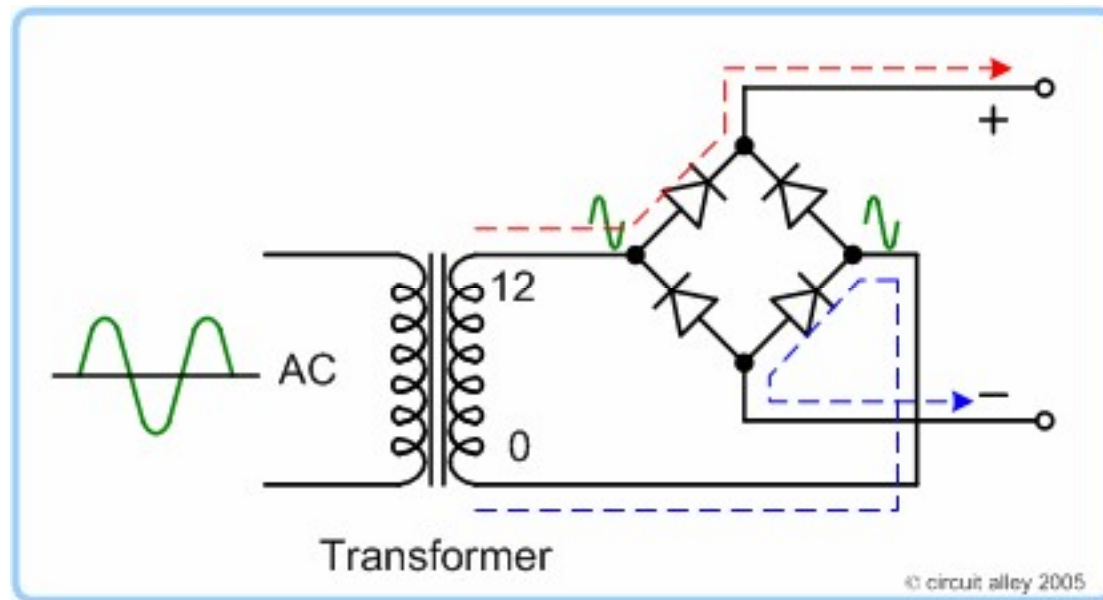
# Full wave rectifier using transformer and 2 diodes





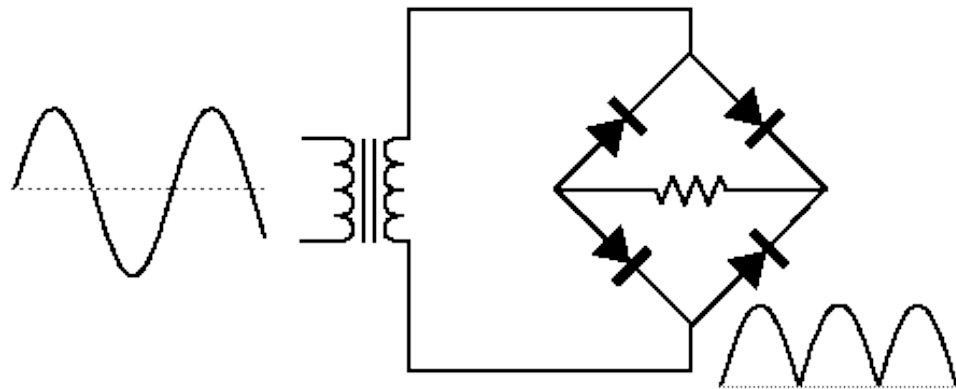


# Full wave rectifier working animation



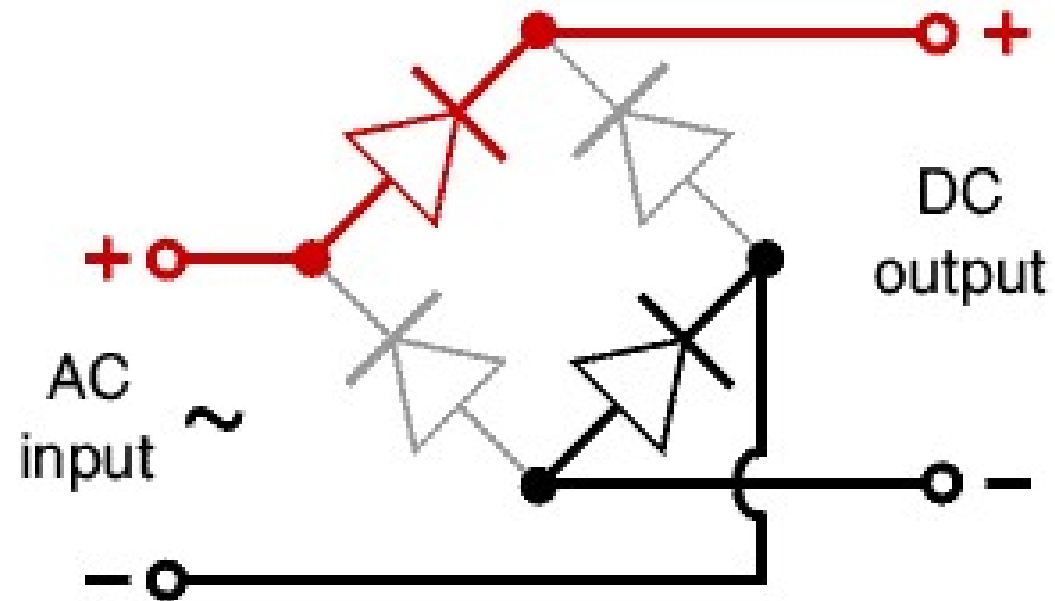


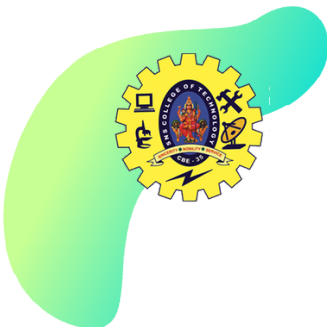
# bridge Rectifier



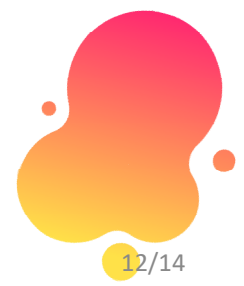
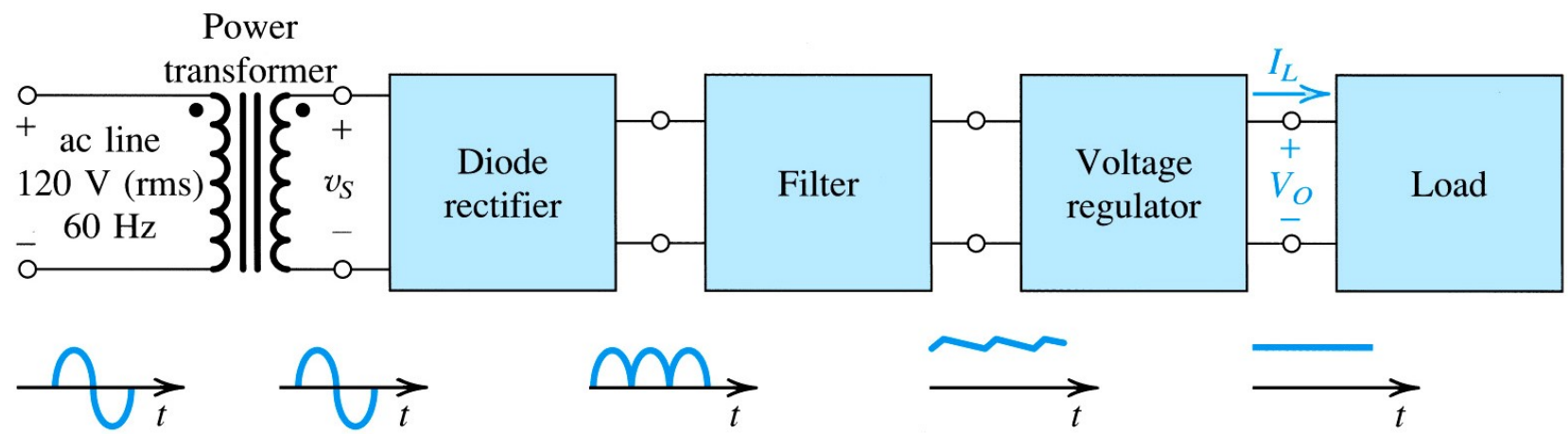


# Bridge Rectifier Animation





# Block diagram of a dc power supply





# Contd..

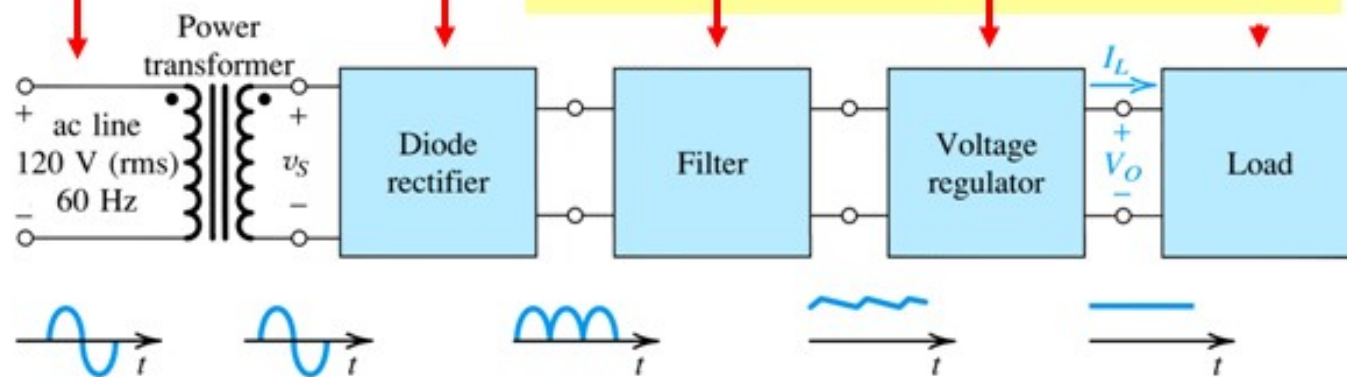
**step #1:** increase / decrease rms magnitude of AC wave via power transformer

**step #2:** convert full-wave AC to half-wave DC (still time-varying and periodic)

**step #3:** employ low-pass filter to reduce wave amplitude by  $> 90\%$

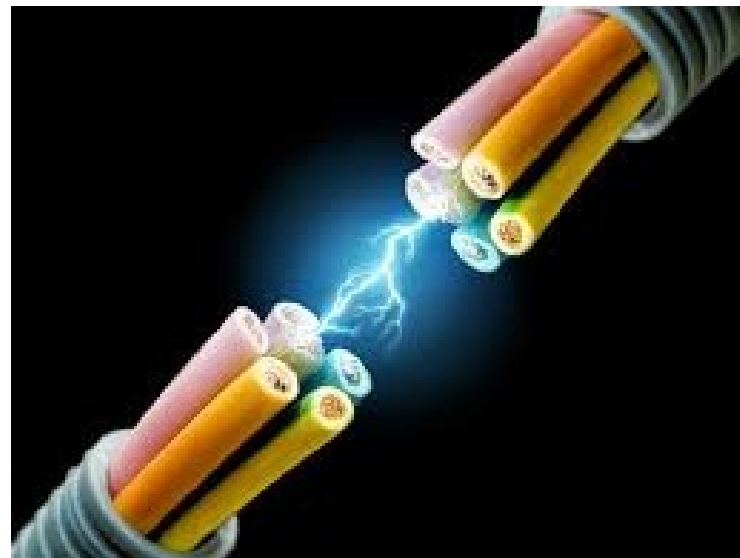
**step #4:** employ voltage regulator to eliminate ripple

**step #5:** supply dc load





# RECAP....



# ...THANK YOU