



# SNS COLLEGE OF TECHNOLOGY

Coimbatore-35  
An Autonomous Institution

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

## DEPARTMENT OF MECHATRONICS

**19MCB302 – INDUSTRIAL ELECTRONICS & APPLICATION**  
III YEAR V SEM

### UNIT 4 – Inverter

### TOPIC – Single Phase Inverter

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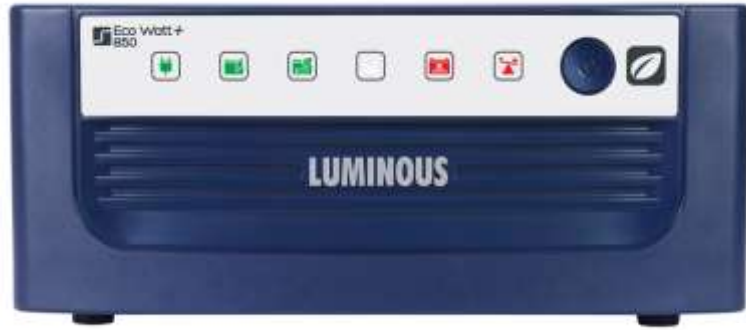
DEPARTMENT OF MECHATRONICS,

SNSCT, Coimbatore.





# APPLICATION





## Intro-Inverter

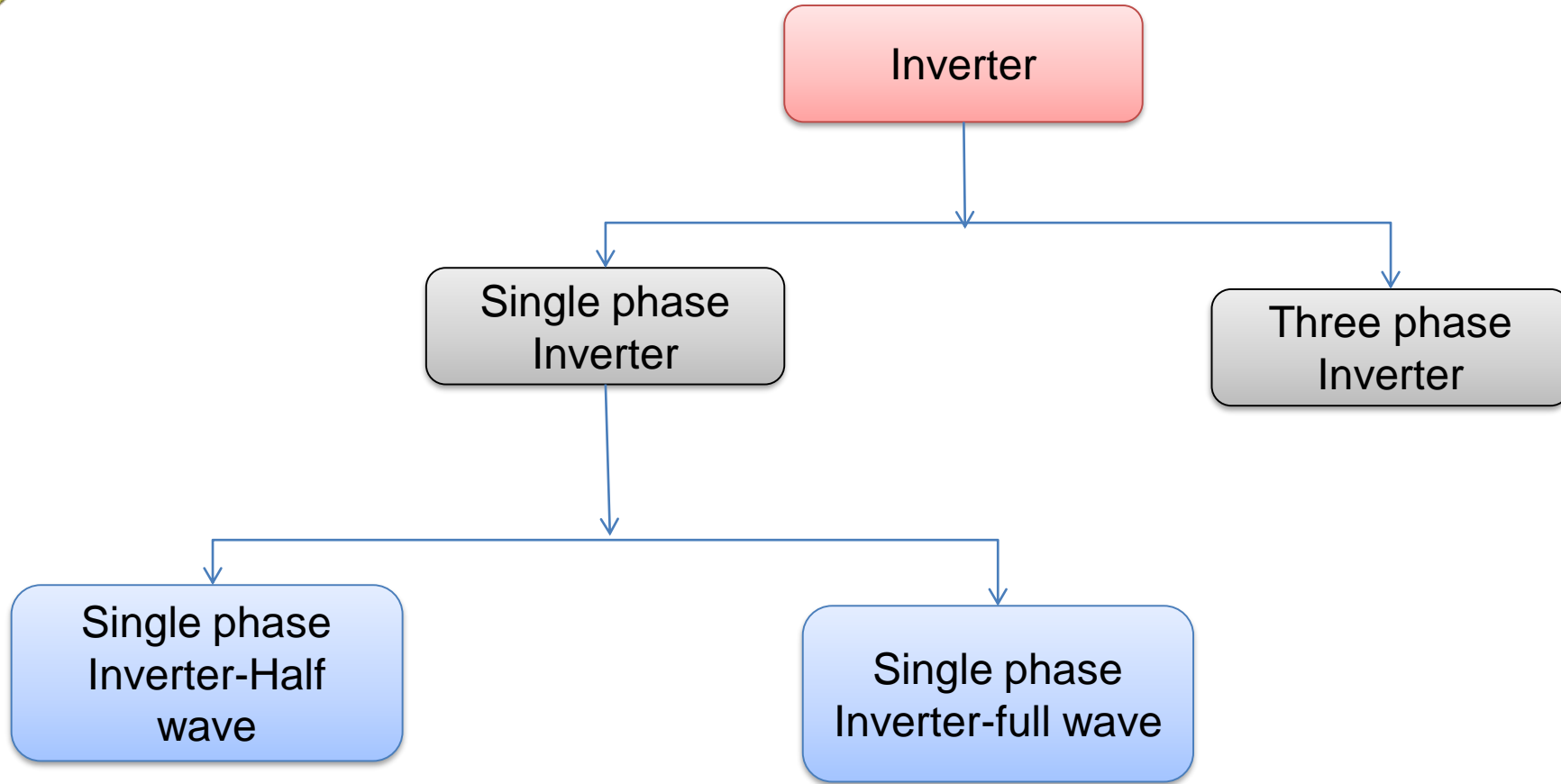
Inverter is defined as an Electrical device which converts the Direct current source into the Alternating current source.



The main source of electrical power is the battery which is a DC source. The DC output of the battery is bucked or boosted according to the requirement and then converted into AC using a DC-AC inverter.



**Types of inverter-**

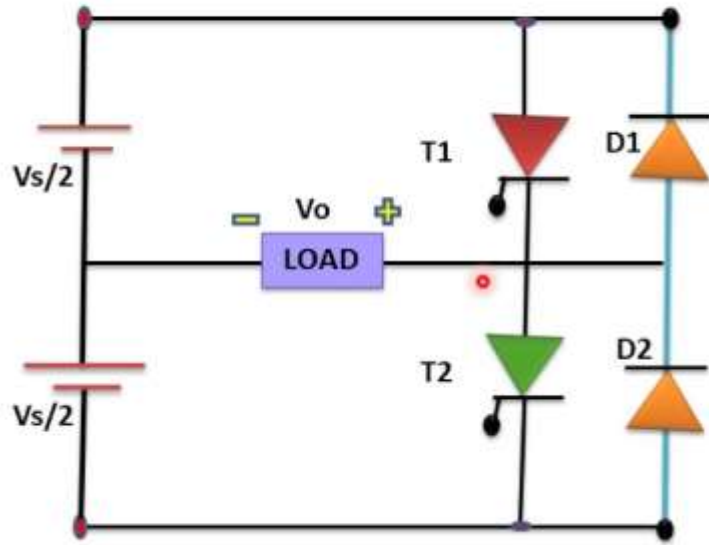




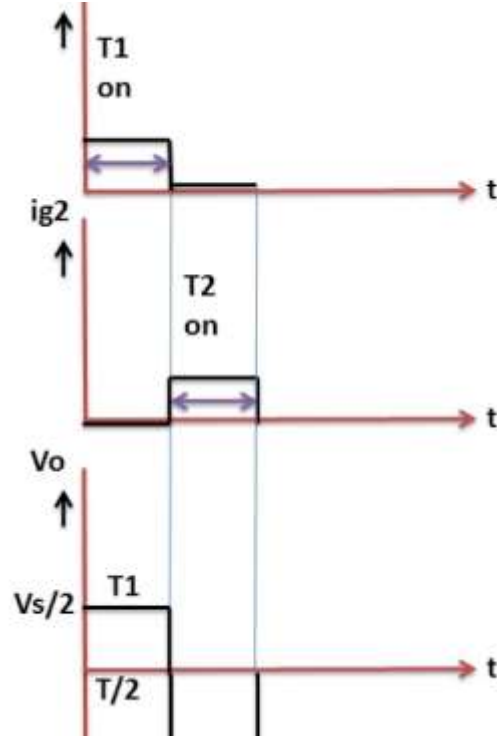
# Single phase Inverter-Half Wave



GROW



LEARN



2 SCR



controlled converter

Input



Uncontrolled DC

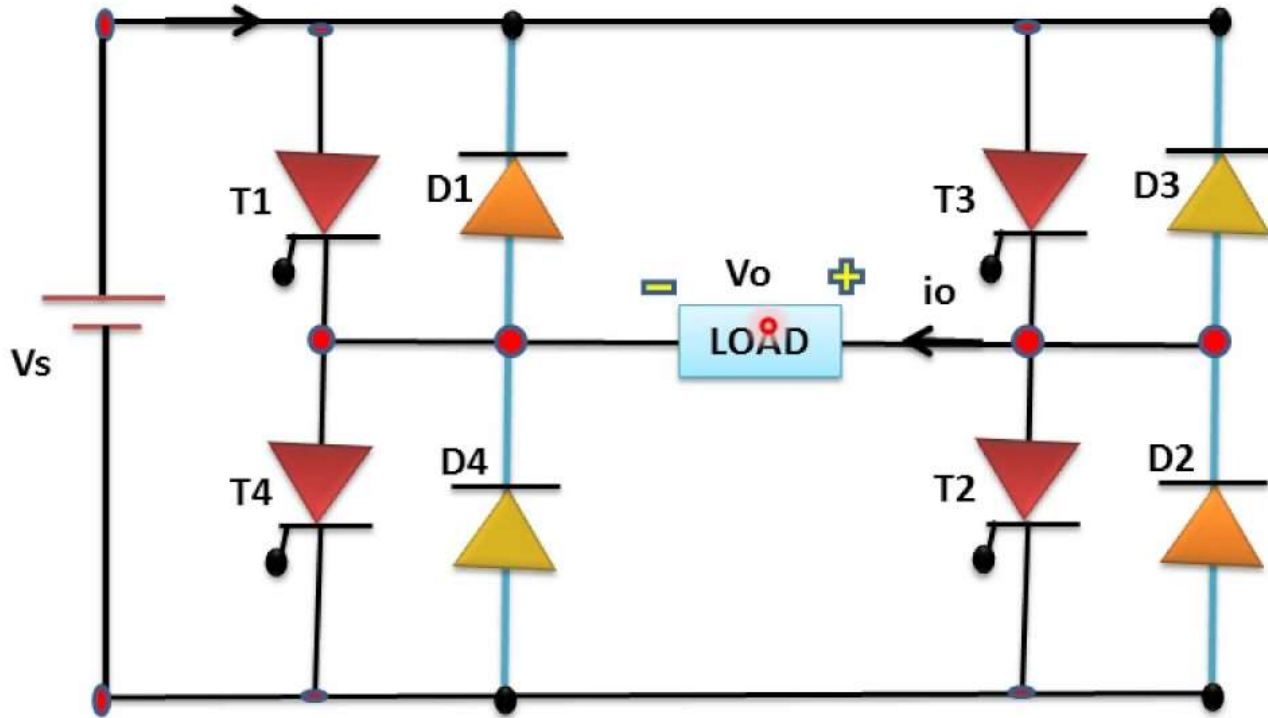
Output



controlled AC



## Single phase Inverter-Full Wave



4 SCR



controlled  
converter

Input



Uncontrolled  
DC

Output



controlled AC



## Single phase Inverter-Full Wave- Output Waveform

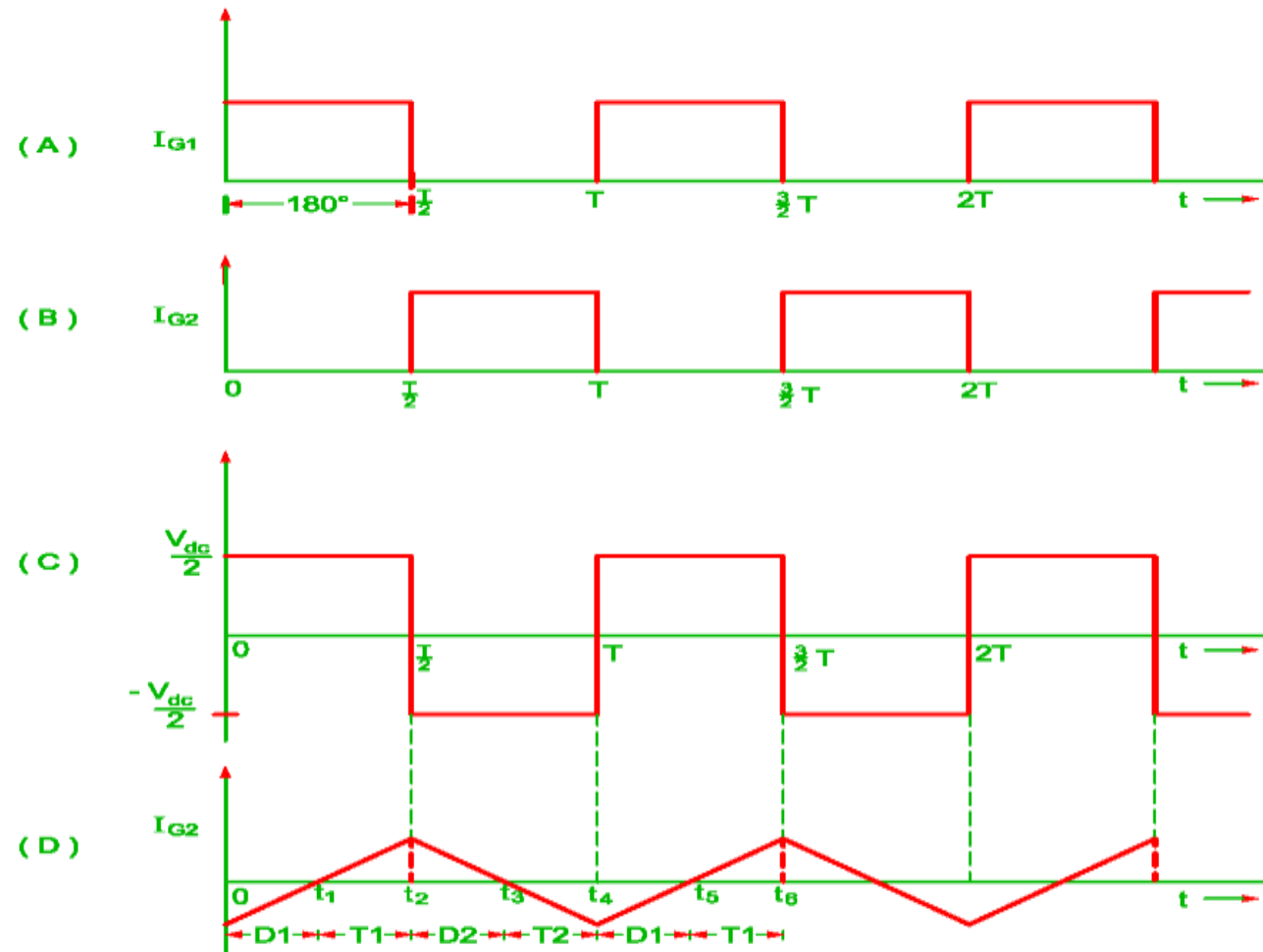


Figure C : GATE SIGNAL AND OUTPUT VOLTAGE WAVEFORMS

(A) GATE SIGNAL FOR SCR T1

(B) GATE SIGNAL FOR SCR T2

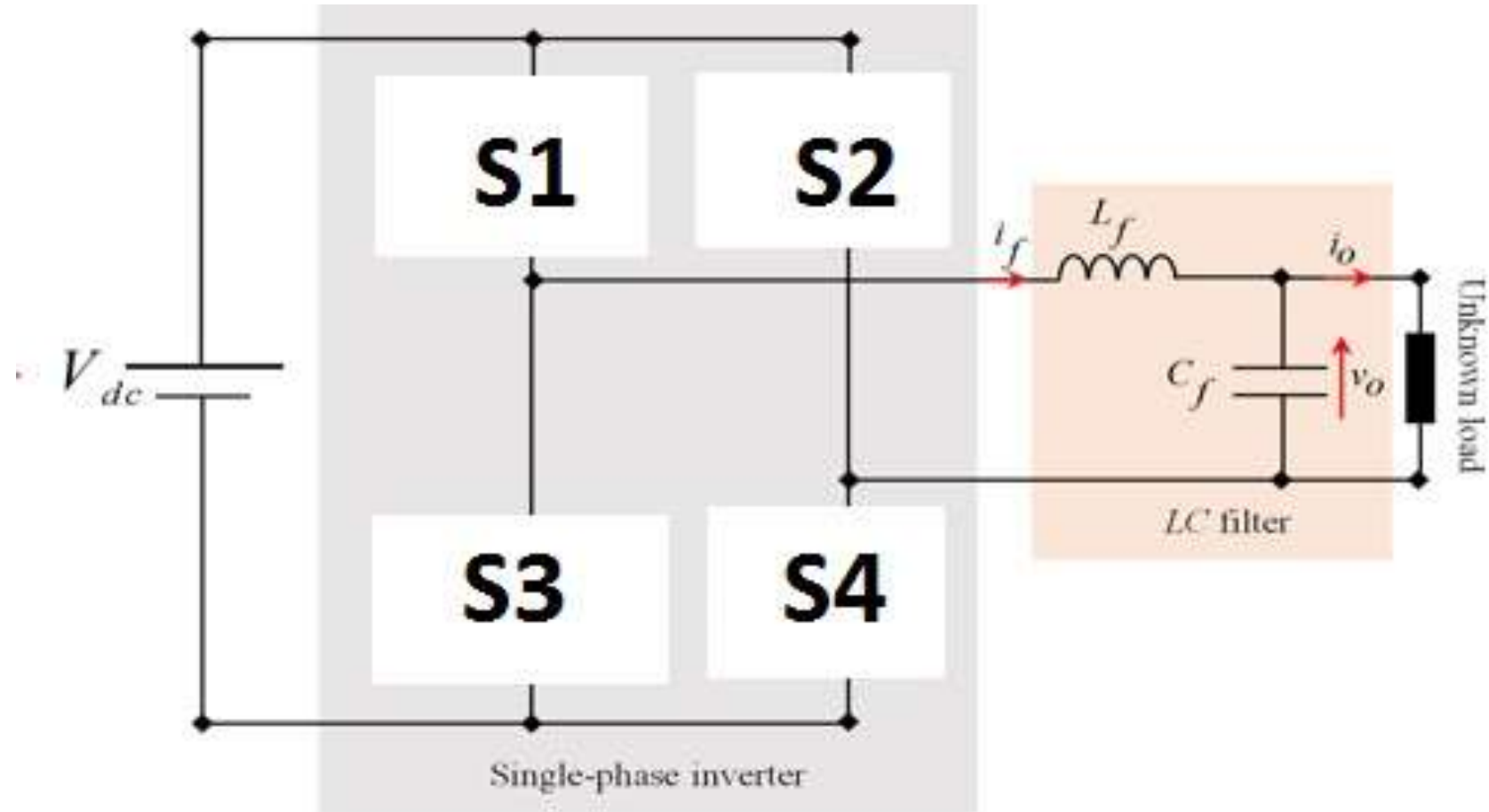
(C) OUTPUT VOLTAGE

(D) OUTPUT CURRENT FOR R-L LOAD





Assessment - Choose the suitable switch(S1,S2,S3 and S4) for of the given circuit ?







## References

1. [https://www.google.com/search?q=4+quadrant+chopper&tbm=isch&ved=2ahUKEwi-0MGbn8zqAhVi23MBHW-cAb0Q2-cCegQIABAA&oq=4+quadrant+chopper&gs\\_lcp=CgNpbWcQA1DRhxNYtKoTYMerE2gAcAB4AIAB2wWIAAdsFkgEDNi0xmAEAoAEBqgELZ3dzLXdpei1pbWc&scient=ima&oi=7GFNY76nFOK2z7sP77iG6As&bih=657&biw=1366#imgrc=FMKXEVK-880joM](https://www.google.com/search?q=4+quadrant+chopper&tbm=isch&ved=2ahUKEwi-0MGbn8zqAhVi23MBHW-cAb0Q2-cCegQIABAA&oq=4+quadrant+chopper&gs_lcp=CgNpbWcQA1DRhxNYtKoTYMerE2gAcAB4AIAB2wWIAAdsFkgEDNi0xmAEAoAEBqgELZ3dzLXdpei1pbWc&scient=ima&oi=7GFNY76nFOK2z7sP77iG6As&bih=657&biw=1366#imgrc=FMKXEVK-880joM)
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