DC Machines

m/cs :

1). T/F ⇒ → ac

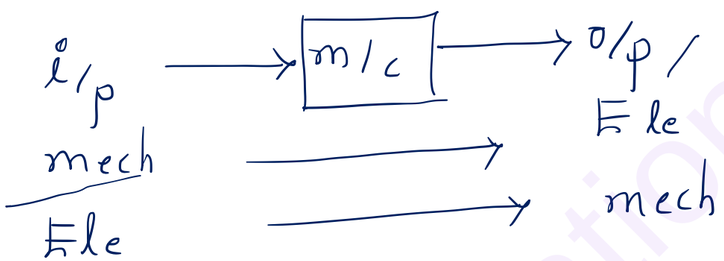
2). I 'M. → ac.

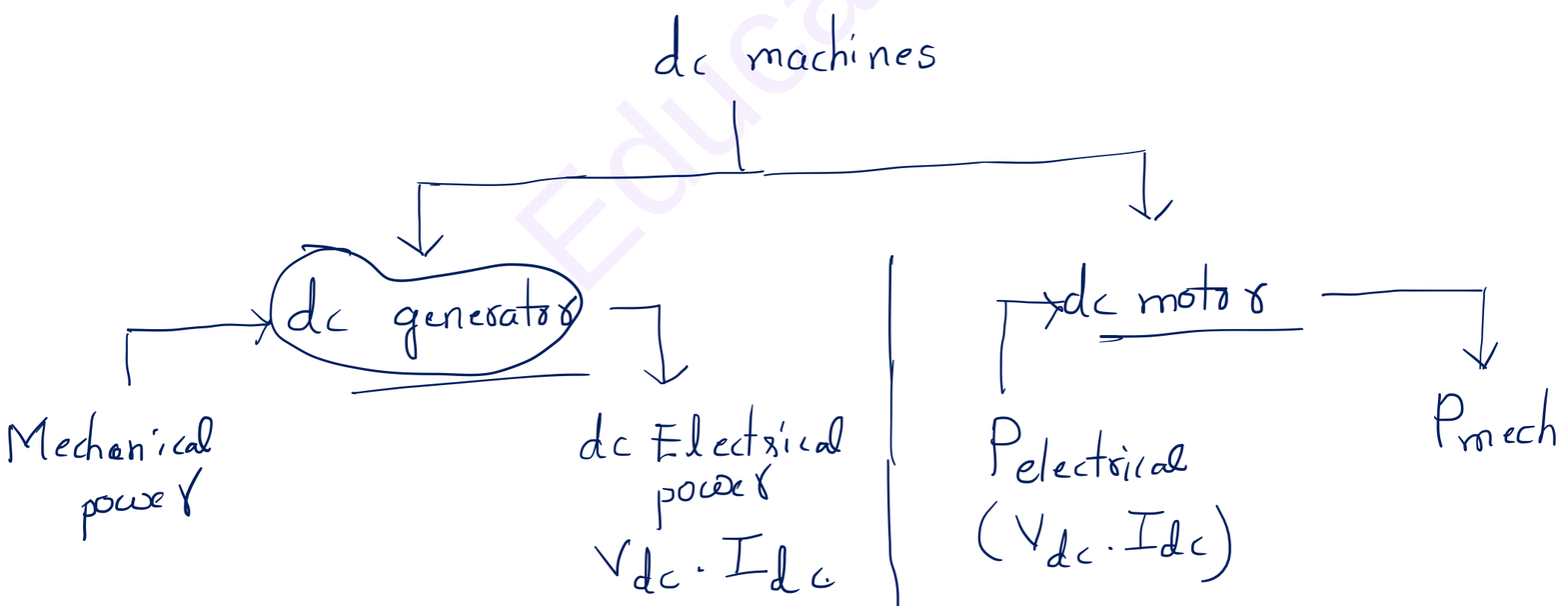
3). dc m/c ⇒ → dc

4). Synchronous m/cs → ac

DC Electrical m/cs

— Dc m/c's are deals with dc supply.





dc m/c s

1. Field
2. Armature (I.M., S.M)
3. Commutator *

1. Field:

- the part which is useful to generate the required magnetic flux.
- It is stationary part.

for motor → $T \propto K \cdot \phi \cdot I_a$

ϕ → field flux, I_a → Armature current.

2. Armature:

- It is collection of conductors.
- It is rotating part.

3. Commutator :

- Commutator is a device which is useful to convert from "ac supply" to dc supply" (or) from "dc supply" to "ac supply".

P_{ac} → comm → P_{dc}

(or)

P_{dc} → comm → P_{ac}

dc m/c :

generat: 1) conductors generate ac

motor: 2) conductors take ac supply

- It is "mechanically rotating fullwave uncontrolled Rectifier / Inverter"

Rectifier → ac – dc → dc gen

Inverter → dc – ac → dc motor.

- It is madeup with "Hard-drawn copper".