

Ans -

ch. 6 - 1, 2, 5, 6
14, 15, 18
20, 24

GA
①

Power and energy

For resistors -- $p = vi$ - since v and i have the same sign, power is always positive (dissipated).

For inductors: if $v = L \frac{di}{dt}$

$$p = i L \frac{di}{dt}$$

For capacitors: if $i = C \frac{dv}{dt}$

$$p = v C \frac{dv}{dt}$$

Since i, v are time variant,
and don't always have the same sign -
power can be positive or negative, storing energy
but averages 0 overall time. releasing energy

Energy: (W) $p = \frac{dw}{dt}$ (Power is the time rate of expending energy)

Energy isn't dissipated in L's & C's,
It is stored for future use.