

$$1-) R_{eq} = \frac{V}{I} = \frac{20}{2} = 10 \Omega$$

$$R_1 = 15 \Omega, R_2 = ? \quad R_{eq} = 10 \Omega$$

if series: $R_{eq} = R_1 + R_2$
 $R_2 = -5$ } \Rightarrow it can not be series

if parallel: $\frac{1}{R_{eq}} = \frac{1}{R_1} + \frac{1}{R_2}$
 $\frac{1}{10} = \frac{1}{15} + \frac{1}{R_2} \Rightarrow R_2 = 30 \Omega$ } The resistances are connected parallel

$$2-) P = V \cdot I = V \cdot \frac{V}{R} \Rightarrow P = \frac{V^2}{R}$$

P will be maximum if R will be minimum.

if series: $R_{eq} = R_1 + R_2 \Rightarrow R_{eq} = 15$
 if parallel: $\frac{1}{R_{eq}} = \frac{1}{9} + \frac{1}{6} \Rightarrow R_{eq} = 3.6 \Omega$ } \Rightarrow Then resistances are connected parallel and $R_{eq} = 3.6 \Omega$

$$P = \frac{V^2}{R} = \frac{18^2}{3.6} \Rightarrow P = 90 W$$