

$$(A) \begin{cases} MRS_{xy} = P_x / P_y \\ P_x X + P_y Y = M \end{cases} \Rightarrow \begin{cases} Y/X = \frac{1}{2} \\ 10X + 20Y = 1000 \end{cases} \Rightarrow \begin{cases} X_0 = 50, Y_0 = 25 \\ U_0 = 1250 \end{cases}$$

$$(B) \begin{cases} MRS_{xy} = (P_x + t) / P_y \\ (P_x + t)X + P_y Y = M \end{cases} \Rightarrow \begin{cases} Y/X = 1 \\ 20X + 20Y = 1000 \end{cases} \Rightarrow \begin{cases} X_1 = Y_1 = 25 \\ U_1 = 625 < U_0 \end{cases}$$

$$(C) T = 10 \times 25 = 250$$

$$(D) \begin{cases} MRS_{xy} = P_x / P_y \\ P_x X + P_y Y = M - T \end{cases} \Rightarrow \begin{cases} Y/X = 1/2 \\ 10X + 20Y = 750 \end{cases} \Rightarrow \begin{cases} X_2 = 37.5, Y_2 = 18.75 \\ U_2 = 307.125 < U_1 \end{cases}$$

(E) $\because X_1 < X_2$ \therefore 课税导致需求抑制

(F) $\because U_2 > U_1$, 故以消费者

$$(G) \begin{cases} MRS_{xy} = (P_x + t) / P_y \\ (P_x + t)X + P_y Y = M + T \end{cases} \Rightarrow \begin{cases} Y/X = 1 \\ 20X + 20Y = 1250 \end{cases} \Rightarrow \begin{cases} X^* = 31.25, Y^* = 46.25 \\ U_1 = 996.5625 < U_0 \end{cases}$$