Solution:

(i) See text.

(ii) Investment multiplier is given by $\frac{Y}{I} = \frac{1}{1 - b + bt}$.

but $b = 0.8 = MPC$, $t = 0.2$

$$\Longrightarrow \therefore M_I \quad \frac{Y}{I} = \frac{1}{1-0.8+0.16} = \frac{1}{0.36}$$

$$= \underline{2.78}$$

Tax multiplier is given by,

$$M_t \quad \frac{Y}{T} = \frac{-b}{1 - b + bt}$$

$$\Longrightarrow M_t = \frac{-0.8}{1-0.8+0.16} = \frac{-0.8}{0.36}$$

$$= \underline{-2.2}$$

This means that a unit increase in the tax level will lead to a reduction in aggregate demand by 2.2 times.
The negative sign therefore shows that tax rate is inversely relates to aggregate demand.

(iii) $$Y = \frac{a - bTo + Io + Go}{1 - b + bt}$$

$$Y = \frac{100 - (0.8 \times 50) + 200 + 300}{1 - 0.8 + 0.16}$$

$$= \frac{620}{0.36} = 1722.2$$

Qn 2. Given that $C = 200 + 0.8Yd$, $T = 100 + 0.25Y$, $I = 600$ and $G = 500$,

(i) Find the equillibirum level of income.

(ii) Find the level of autonomous spending.

(iii) Comment of the government budget position.

Solution

(i) $Y = C + I + G$

$Y = a + b(y-T) + Io + Go$

$\Longrightarrow Y = a + bY - BTo - btY + Io + Go$

Collect like terms together,

$Y - BY + BtY = A - bTo + Io + Go$

$Y(1-b+bt) = a - bTo + Io + Go$

$$\Longrightarrow Y = \frac{a - bTo + Io + Go}{1 - b + bt}$$