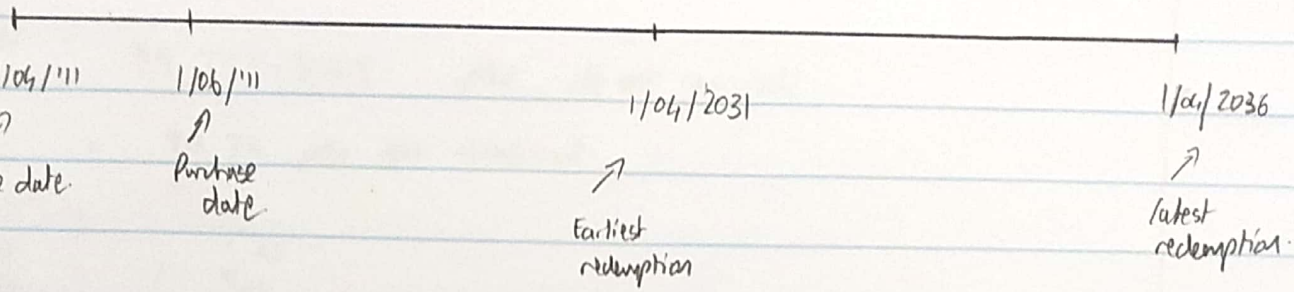
N: 100 000

Coupon rate = 6% p.a. Coupon dates: 1 Oct and 1 Apr

R = 1.05



$t_1 = 0.2$

$t_2 = 0.35$

min. net effective yield = 5%

(i) Max price paid by investor corresponds price which gives the lowest yield (return)

First check for capital gains so that we know when to redeem.

Find $i^{(2)}$, since coupons paid half yearly:

$i^{(2)}$: $\quad 1+5\% = \left(1+\frac{i^{(2)}}{2}\right)^2$

$$\left[(1+5\%)^{1/2} - 1\right] \times 2 = i^{(2)}$$

$$0.04939015319 = i^{(2)} \quad \rightarrow \text{store this as (A)}$$

$$(1-t_1)g = (1-0.2) \times \frac{6\%}{1.05} = 0.04571428571$$

$\therefore \quad i^{(2)} > (1-t_1)g \Rightarrow$ Capital gains $\therefore$ since redemption is at option of borrower, redeem on the latest possible date

i.e. 1/04/2036. ie

$$\therefore PN = (1-0.2) \times 100\,000 \times 6\% \times a^{(12)}_{\overline{25}|} \times \boxed{(1+5\%)^{2/12}} + 100\,000 \times 1.05\, v_{5\%}^{24\frac{10}{12}}$$

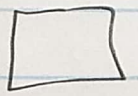
$$- 0.35\,(105\,000 - PN)\, v^{24\frac{10}{12}}$$

$$0.8958\,PN = 100\,305.3929 - 10\,940.98485$$

$$PN = 99\,759.31419 \quad \text{per } 100\,000 \text{ nominal}$$

$$= 99.76 \text{ per } 100 \text{ nominal}$$

$$a^{(12)}_{\overline{25}|} = \frac{1 - v_{5\%}^{25}}{i^{(12)}}$$



we multiply by $(1.05)^{2/12}$ because the annuity factor takes us back to 1/04/'11, but purchase date is 1/06/'11.