Question 3

① $T = 133$ days $\quad r = 1.58\%$

$$C + Ke^{-rT} = P + Se^{-qT}$$

$$10.21 + 312e^{-1.58\% \times \frac{133}{360}} = 10.52 + 311.97e^{-q \times \frac{133}{360}}$$

$$\boxed{q = 0.0182}$$

implied forward rate $= 0.0158 - 0.0182 = \boxed{-0.0024}$

②

K	implied of options
310	0.1390
311	0.1387
312	0.1369
313	0.1345
314	0.1317
315	0.1294
316	0.1283
317	0.1249
318	0.1222
319	0.1189
320	0.12