

**Question 2**

What is the effective interest rate payable on a 1 year loan for GBP 100 at 10% per annum nominal, when the rate is compounded:

a) Annually?

$$\text{Effective interest rate} = (1 + 10\%/1)^1 - 1 = 0.10$$

b) Semi-annually?

$$\text{Effective interest rate} = (1 + 10\%/2)^2 - 1 = 0.1025$$

c) Daily?

Suppose a year has 365 days,

$$\text{Effective interest rate} = (1 + 10\%/365)^{365} - 1 = 0.1052$$

**Question 5**

Face value: \$100.00

Maturity: 2 years

Yield: 5.90%

Coupon: 7.5%, semi-annual

a) Calculate the price of the US Treasury bond above, rounded to 2 decimal places:

$$\begin{aligned} \text{Bond Price} &= \frac{7.5\%/2}{1 + 5.9\%/2} + \frac{7.5\%/2}{(1 + 5.9\%/2)^2} + \frac{7.5\%/2}{(1 + 5.9\%/2)^3} + \frac{100 + 7.5\%/2}{(1 + 5.9\%/2)^4} \\ &= \$89.16 \end{aligned}$$