

1. A company sold on November, 2 the following bills:

1st promissory note payable on November, 9 its value at maturity is 12,000.00,

2nd promissory note payable on December, 2 its value at maturity is 17,500.00,

3rd promissory note payable on December, 7 its value at maturity is 7.000.00.

How much received the company from all bills, if the discount rate is 12%?
[36,215.33]

2. Decide which one of the two options is better, if the depositor can invest 100,000.00 for three years.

The first option: *The bank offers an interest rate - 4% p. a. and the interest period is one year. Moreover 10% of the interest is exempt from tax.*

The second option: *The bank offers in the first year an interest rate of 4% p. a. and in the next years the interest rate will be 4,2% p. a. Unlike the first variant the interest period is each third month (quarterly).*

The tax rate is for both options 15%. [Second option: 111,064.3498>110,743.3]

3. How many products with current price of 5,000.00 can you buy in five years? You save on your bank account 1,000,000.00 and your bank gives you the first two years 3% p. a. calculating the interest once a year. But in the third year the bank start to reduce the interest rate - each year by 7,5% from the initial rate (i.e. the third, the fourth and the fifth year the interest rate will be still falling). You have to pay tax and the tax rate is 15%. In addition, you know that the last two years the bank will change the interest period to semi-annual. The level of inflation in the economy is 2,5%, 3,0%, 2,3%, 1,9% and 1,6%. [200]
4. Calculate the interest rate, which a bank pays you, if you know that in eight years you will have on the account 7,572.8571. Further, you know that the initial capital was 11,000.00 and the bank is calculating the interest each tenth day. Five years later after putting the money on the bank account you will withdraw half of all money from the account. [4%]
5. Calculate the effective interest rate. The value of the initial capital is 12,645.00 and the future value of the capital will be 14,568.5033. For capitalization use the concept of continues interest ($C_t = C_0 * e^{f*t}$). Make proof of your result. [f= 4.72%, $i_e = 4.83317\%$]