Corporate Finance
Tools Exam

Writing time: 60 minutes

15 questions – please circle the best alternative in multiple choice questions, and show clearly your work in open-ended questions.

Name Answer Key – correct answers in red

Student number _____

Pledge: I have neither given nor received aid in completion of this exam

Signed: _____

1. According to the corporate finance theory, the goal of the corporation is

   a) stakeholder wealth maximization
   b) shareholder wealth maximization
   c) employee morale maximization
   d) minimization of agency conflicts

2. When inflation and real growth are taken into account, the present value of euros received in the future is

   a) equal to their face value.
   b) greater than their face value.
   c) less than their face value.
   d) approaching zero.

3. Bond financing is equivalent of using which of the following financing instrument?

   a) debt.
   b) equity.
   c) options.
   d) warrants.

4. Which of the following statements is NOT true?

   a) The IRR is easier to use than the NPV, as the IRR method does not require knowledge of the cost of capital.
   b) The IRR and the NPV may rank mutually exclusive projects differently.
   c) The NPV is the preferred method of capital budgeting.
   d) The IRR can have multiple answers.

5. For a company with the following data, what is the Weighted Average Cost of Capital (WACC) (assume that the firm uses only debt and equity in its financing)?

Cost of debt (pre-tax) = 7%
Beta = 1.5
Risk-free rate = 3%
Market risk premium = 6%
Weight of equity (market based) = 55%
Marginal tax rate = 40%

a) 8.5%
b) 9.5%
c) 12.5%
d) 9.8%

6. A €3750 investment is expected to produce net cash flows of 150 at the end of year 1, 170 at the end of year 2, and after that they are expected to grow at 3% to infinity. If the cost of capital is 8%, what is the NPV of the project, rounded to euros?

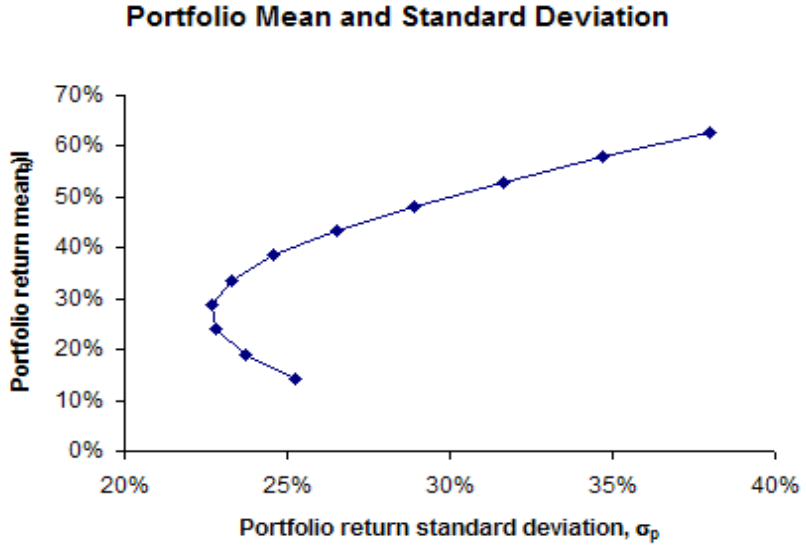
a) -3430
b) -463
c) 37
d) 67

7. As a security analyst, what would be your recommendation regarding the following company?

Current dividend (@time 0) = €4
WACC = 8%
Growth rate of dividends = 4%
Current stock price = €101

a) BUY
b) SELL
c) AVOID
d) RUN

8. Consider the graph below, and choose the best answer from the choices below it.




a) The maximum expected rate of return in this graph is approximately 60%.
b) The lowest possible risk level in this graph is about 25%.
c) If the risk free asset does not exist, all investors are expected to invest at a point above the curve in the graph.
d) This graph illustrates the relationship between leverage and bankruptcy costs.

9. What is the expected return for XYZ, Inc.'s stock?

T-Bill return = 3%
Expected return on the S&P 500 Index = 12%
XYZ, Inc.'s Beta = 1.2

a) 13.8%
b) 4.2%
c) 3.0%
d) 14.3%

10. How does an increase in leverage affect volatility of the firm's stock?

a) It reduces it.
b) Leverage does not affect stock volatility.
c) It increases it.
d) This question does not make any sense.

11. An interest rate decrease will cause bond prices to

a) increase.
b) decrease.
c) remain unchanged for existing bonds.
d) equal interest rates.

12. How many dollars is each coupon payment of a bond that has $1,000 par value, 7.25% coupon rate, and semi-annual coupon payments?

a) $41.25
b) $82.50
c) $36.25 (In another version, there were accidentally two options, both equal to 36.25 – both were considered correct)
d) $725

13. Calculate the value of the bond in question 12, given that it has 5 years to maturity and your required rate of return is 5.5% (show your calculations – in case you are using a financial calculator, show key strokes)

PMT=36.25
N=10
FV=1000
I=5.5%/2 = 2.75%

Gives PV=1075.60
Solutions where annual coupons had been used were considered incorrect. Using semiannual compounding was considered correct, while the bond market simply divides annual interest rate by 2, as shown above.

14. With a call option that has a strike price of €35, you can

a) purchase the underlying asset for €35.
b) sell any asset for €35.
c) sell the underlying asset.
d) switch from being a bondholder to being a stockholder.

15. Explain in 15 words or less, how an increase in volatility of the underlying asset would affect the value of a call option, and why.

Increased volatility improves the chance that the option will end up in the money, which is why its value would increase.

$$FV_n = PV(1+i)^n = PV(FVIF_{i,n})$$

$$FV_n = PV\left(1+\frac{i}{m}\right)^{mn}$$

$$PV = FV_n\left[\frac{1}{(1+i)^n}\right] = FV_n(PVIF_{i,n})$$

$$FV_n = PMT\left[\frac{(1+i)^n - 1}{i}\right] = PMT(FVIFA_{i,n})$$

$$PV = PMT\left[\frac{1-[1/(1+i)^n]}{i}\right] = PMT(PVIFA_{i,n})$$

$$PV = \frac{PP}{i}$$

$$k_j = k_{rf} + \beta_j(k_m - k_{rf})$$

$$P_b = \sum_{t=1}^{n}\frac{Coup_t}{(1+k_d)^t} + \frac{Mat}{(1+k_d)^n}$$

$$YTM = \frac{Coup + \frac{Par - Market}{n}}{\frac{Par + 2(Market)}{3}}$$

$$P_p = \frac{Div}{k_p}$$

$$V_{cs} = \frac{D_1}{k_{cs} - g}$$

$$g = ROE * r$$

$$WACC = w_d k_d(1-t) + w_{ps}k_{ps} + w_{cs}k_{cs}$$

$$r = \frac{(1+n)}{(1+i)} - 1$$