

## MFE

MOCK TEST – 11-05-2020

### Answer topics

#### **Part A – MCQ** [40 points = 4 points\*10.MCT]

##### **1. The money market**

- A) Is the market where money is traded.
- B) Is the market where debt securities over one year are traded.
- C) *Is the market where the monetary authority intervenes.*
- D) All the other answers are correct.

##### **2. The idiosyncratic risk**

- A) It is a form of systemic risk.
- B) Increases with the decrease of the systemic risk.
- C) It is the opposite of the systemic risk.
- D) *None of the above is true.*

##### **3. In a portfolio with two risky assets, how is it possible that the risk of the portfolio is lower than the risk of the asset with the lowest risk:**

- A) *The correlation coefficient is 0.*
- B) The correlation coefficient is +1.
- C) The correlation coefficient is +3.
- D) None of the above is true.

##### **4. Say which is the wrong answer: the efficient frontier is the geometric locus of the portfolio investment opportunities that meet the following conditions.**

- A) For a given expected return there are no other portfolios with lower risk.
- B) For a given level of risk there are no other portfolios with higher expected return.
- C) *For a given expected return there are other portfolios with the same risk.*
- D) There are no other portfolios with higher expected return and lower risk.

##### **5. To obtain an optimal portfolio the investor should**

- A) Determine the tangency point of the efficient frontier with the lowest indifference curve.
- B) Determine the tangency point of the investment opportunity set to the highest indifference curve.
- C) Determine the tangency point of the investment opportunity set to the utility function.
- D) *Determine the tangency point of the efficient frontier to the highest indifference curve.*

**6. According to the Fisher Effect if there are expectations of increasing inflation:**

- A) The supply and the demand for bonds increase, bond prices increase and the interest rate decreases.
- B) The supply and the demand for bonds decrease, bond prices decrease and the interest rate increases.
- C) *The supply for bonds increases and the demand for bonds decreases, bond prices decrease and the interest rate increases.*
- D) The supply for bonds increases and the demand for bonds decreases, bond prices increase and the interest rate decreases.

**7. The segmentation market theory explains why:**

- A) When the expectations are for an increase in the interest rates, the slope of the yield curve is positive.
- B) The yield curve has a positive slope when the short term interest rates are low.
- C) *The yield curve usually has a positive slope.*
- D) All the other answers are correct.

**8. The coupon yield is equal to**

- A) The coupon rate.
- B) *The coupon rate times the face value.*
- C) The interest rate times the face value.
- D) The interest rate.

**9. The generalised dividend valuation model model**

- A) Admits dividend growth in two phases.
- B) Assumes constant dividends throughout time.
- C) *Implies the estimation of an infinite number of dividends.*
- D) Assesses the stock price only via the actual value of dividends.

**10. In the Gordon model, if the market price of a stock is 170 EUR, the growth rate of the dividends is 2%, and the expected return is 5%, what was the last distribution of dividends?**

- A) 4.00 EUR.
- B) *5.00 EUR.*
- C) 50.00 EUR.
- D) 45.00 EUR.

**Part B** – [60 points = 20 points\*3]

1. Taking into account your knowledge of the bond market, explain what will happen to bond demand when one expects an increase in a country's wealth and also the increase in the increase of the expected interest rate in that country.

An increase in wealth increase bond demand (higher bond prices and lower bond interest rates).

On the other hand, an increase in the expected interest rate decreases bond prices. Bonds become less attractive, and bond demand drops. The final effect will depend on the magnitude of each effect.

2. Consider that the ECB wants to provide liquidity to the markets of 150 million EUR, with a reversible operation via an auction, and it receives the following proposals from the counterparts (million EUR). Compute the marginal interest rate of the auction and the total amount of funding provided to Bank C.

Interest rate %	Bank A	Bank B	Bank C		
0.14%			5	5	5
0.13%	20	5	5	30	35
0.12%	20	5	10	35	70
0.11%	15	20	15	50	120
0.10%	25	30	20	75	195
0.09%	30	20	20		
0.08%	10	10	10		

Marginal interest rate of the auction: 0,1%.

$$\text{Bank C} = (5+5+10+15) + (30/75) \times 20 = (35 + 8) = 43$$

3. Consider the following information regarding two financial assets. Compute the expected rates of return and the risks measured by the standard deviation, of each asset. Determine analytically and draw the Investment Opportunity Set (upload the diagram).

Asset 1		Asset 2	
Probability	Return (%)	Probability	Return (%)
0,200	10	0,200	4
0,400	8	0,400	3
0,400	6	0,400	2

	Pi	Ri	pi*Ri		Pi	Ri	pi*Ri
	0,200	10	2,00		0,200	4	0,80
	0,400	8	3,20		0,400	3	1,20
	0,400	6	2,40		0,400	2	0,80
<b>E(R1)</b>			<b>7,6</b>	<b>E(R2)</b>			<b>2,8</b>

	Ri-E(R)	2,40		Ri- E(R)	1,2
		0,40			0,2
		-1,60			-0,8
sdvp ^2		5,76	sdvp ^2		1,44
		0,16			0,04
		2,56			0,64
Var		2,24	Var		0,56
<b>sdvp</b>		<b>1,50</b>	<b>sdvp</b>		<b>0,75</b>

Cov 1,1200  
 Rho 1,0000

**IOS**  
**Rp= 6,414 + -2,00 sdevp**

