Instituto Superior de Economia e Gestão
UNIVERSIDADE TÉCNICA DE LISBOA

A

Gestão Financeira II / Corporate Finance II

Undergraduate Programs

Mid-Term Test

November 10th, 2012

11:00-12:30

IMPORTANT INFORMATION TO READ BEFORE SOLVING THE TEST:

1. The test has 8 questions of multiple choice (each correct answer scores 2 marks, no answer awards you 0, and an incorrect answer penalizes 0.25 marks) and 1 question (worth 4 points) in which you must present all steps of your solution.
2. You must **answer the multiple choice questions (1 to 8) in the grid presented below in this page**.
3. Fill in your name and student number.
4. You can use pens, pencils and a calculator. Nothing else. A set of formulae is provided together with the questions.
5. You cannot un-staple your test.

Name: _____ No. _____

Question	A	B	C	D
1			x	
2		x		
3		x		
4			x	
5			x	
6			x	
7				x
8			x	

Good luck!

1. Dagny Taggart is a graduating college senior and she is considering the costs of going to medical school. Beginning next fall, Dagny expects medical school tuition to run $45,000 for the first year and she estimates that tuition will increase by 6% each year. If Dagny is able to invest her money in an account paying 8% interest per year, then the present value to Dagny of four years of medical school tuition is closest to:

A) $149,045
B) $155,930
C) $162,095
D) $180,000

t	0	1	2	3	4
		45000	47700	50562	53595.72
g	6%				
r	8%				
PV	€162,093.93				

2. Suppose the interest rate is 9% APR with monthly compounding. Then the present value of an annuity that pays $250 every three months for the next five years is closest to:

A) $2,280
B) $3,985
C) $3,990
D) $3,995

APR	9%	n	12	EAR	0.093806898	
Annuity	250	n	4			
				Effective Quarterly rate	0.022669172	
				n	20	
				Annuity	250	
				PV	3984.489414	

3. Consider the following zero-coupon yields on default free securities:

Maturity (years)	**1**	**2**	**3**	**4**	**5**
Zero-Coupon YTM	5.80%	5.50%	5.20%	5.00%	4.80%

The YTM of a 4 year default free security with a face value of $1000 and an annual coupon rate of 5.25% is closest to:

A) 5.2%
B) 5.0%
C) 4.8%
D) 5.25%

Time		1	2	3	4
Cash Flow		52.50	52.50	52.50	1052.50
PV		49.62192817	47.16875182	45.09330676	865.8943547
Price		1007.778341			
	-1007.778341	52.50	52.50	52.50	1052.50
ytm		5.03%			

4. Which of the following statements is false?

A) Because the cash flows promised by the bond are the most that bondholders can hope to receive, the cash flows that a purchaser of a bond with credit risk expects to receive may be less than that amount.

B) By consulting bond ratings, investors can assess the credit-worthiness of a particular bond issue.

C) Because the yield to maturity for a bond is calculated using the promised cash flows, the yield of bonds with credit risk will be lower than that of otherwise identical default-free bonds.

D) A higher yield to maturity does not necessarily imply that a bond's expected return is higher.

5. Use the following information about bonds:

Security	Term (years)	Yield (EAR) (%)
Treasury	20	5.5%
AAA Corporate	20	7.0%
BBB Corporate	20	8.0%
B Corporate	20	9.6%

Wyatt Oil is contemplating issuing a 20-year bond with semiannual coupons, a coupon rate of 7%, and a face value of $1000. Wyatt Oil believes it can get a BBB rating from Standard and Poor's for this bond issue. If Wyatt Oil is successful in getting a BBB rating, then the issue price for these bonds would be closest to:

A) $800

B) $901

C) $915

D) $1,000

20-yr	n		40		
CPN rate		7%			
Face Value		1000			
BBB	y		8%	semiannual	0.039230485

PV(Coupons)	700.7512923
PV(Face value)	214.5482074
Price	915.2994997

6. Use the following information about the pharmaceuticals industry:

Company	Ticker	Price per Share	Earnings per Share	Book Value per Share
Abbott Labs	ABT	54.35	3.69	13.79
Bristol-Myers-Squibb	BMY	25.45	1.93	7.33
GlaxoSmithKline	GSK	41.3	3.15	6.03
Johnson & Johnson	JNJ	62.6	4.58	18.27
Merck	MRK	36.25	3.81	10.86
Pfizer	PFE	$18.30	$1.20	8.19

Assuming that Novartis AG (NVS) has an EPS of $3.35, based upon the P/E ratios for its competitors, the highest expected stock price for Novartis is closest to:

A) $31.86
B) $44.35
C) $51.09
D) $62.60

P/E	
14.72899729	
13.1865285	
13.11111111	
13.66812227	
9.514435696	
15.25	Highest

Novartis	
Price	51.0875

7. KingKong Industries just announced that it will cut its dividend from $3.00 to $2.00 per share and use the extra funds to expand its operations. KingKong's dividends were expected to grow at a 2% rate, and its share price was $37.50. With the new expansion, KingKong dividends are expected to grow at a 5% rate. KingKong's share price following this announcement should be:

A) $20.00
B) $30.00
C) $37.50
D) $40.00

	Before	After
Div	3	2
g	2%	5%
P	37.5	?
Re	10.00%	10%
Price		40

8. Which of the following statements is false?

A) The compounded geometric average return is most often used for comparative purposes.
B) We should use the arithmetic average return when we are trying to estimate an investment's expected return over a future horizon based on its past performance.
C) The geometric average return will always be above the arithmetic average return and the difference grows with the volatility of the annual returns.
D) The geometric average return is a better description of the long-run historical performance of an investment.

9. (4 points) Consider a new 3-year project – Project CLEAN – for production of a new line of *eau de parfum* by the well-known producers SMELLY:

Year	**1**	**2**	**3**
Revenues	110	60	35

In this industry, the costs of goods sold (excluding depreciation) are approximately 20% of the revenues. Net working capital is 12% of next year's revenues. Capital expenditures today are 120, in a machine with a life of 4 years (straight-line depreciation). At the end of the project the machine will be sold for its book value. If this project goes ahead, the company anticipates annual losses in the sales of its older fragrances of 30. Investors require an annual return of 12%. The corporate tax rate is 35%.

a. (1.5 points) Compute the free cash flows of the project. What is the discounted payback period? Explain.

t	0	1	2	3
Revenues Clean	0	110	60	35
Costs Clean	0	22	12	7
Lost Sales Old fragrances	0	30	30	30
Lost costs old fragrances	0	6	6	6
EBITDA	0	64	24	4
Depreciation	0	30	30	30
EBIT	0	34	-6	-26
EBIT(1-Tc)	0	22.1	-3.9	-16.9
Operating CF	0	52.1	26.1	13.1
CapEx	120	0	0	0
Selling Machine	0	0	0	30
NWC	9.6	3.6	0.6	0
Increase in NWC	9.6	-6	-3	-0.6
FCF	-129.6	58.1	29.1	43.7
disc	-129.6	51.875	23.19834184	31.10479683
cum	-129.6	-77.725	-54.52665816	-23.42186133

No payback period.

b. (1 point) Should you invest in the project? Explain.

Should not invest, negative NPV (-23.42), or no discounted PP, etc.

c. (1.5 points) **Without making further computations**, what can you say about the project's IRR? Please explain.

IRR is less than 12% (cost of capital), since NPV<0 and cash flows allow interpreting IRR in the usual way.

EXTRA SPACE TO COMPLETE QUESTION 9

SCRAP PAPER