LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

Finance and Financial Reporting

Master in Actuarial Science

Exam ER

29/01/2018

3 HOURS

No.

Name: ______________________________ ____________

PLEASE READ THE FOLLOWING INFORMATION BEFORE SOLVING THE EXAM:

1) You are allowed to keep your pens, pencils and a calculator with you as well as the current edition of the Formulae and Tables. The calculator cannot have neither communications nor any kind of texting features.
2) The structure of the exam is the following:
   - Questions 1 to 10 are multiple choice;
   - Questions 11 to 20 require explaining all the steps in your solutions.
3) You must not start writing your answers in the booklet until instructed to do so by the supervisor.
4) Mark allocations are shown in brackets.
5) Attempt all 20 questions. Answer questions 1-10 in the grid to answer multiple choice questions. Answer questions 11-20 in the space given below the question. If you eventually require more space, please, use the additional sheet at the end of this booklet.
6) Candidates should show calculations where this is appropriate.
7) **You are not allowed to un-staple the exam. However, you can detach the scrap paper.**

GOOD LUCK!

GRID TO ANSWER MULTIPLE CHOICE QUESTIONS

Question #	A	B	C	D
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

1) [2 points] Which of the following statements is CORRECT?

a) The primary financial goal of any corporation is to minimize stockholder risk
b) Profit maximization is the main financial goal
c) Maximizing the value of the corporation to the stockholders is not a well-defined objective
d) All of the above are incorrect

2) [2 points] Depreciations are:

a) A cost, but not a cash outflow
b) A cost and a cash outflow
c) An outflow with a tax shield
d) An outflow, but not a cost

3) [2 points] Which of the following statements is FALSE?

a) A decrease in a liability account can be balanced by a decrease in an asset account
b) An decrease in a liability account cannot be balanced by a decrease of a component of the shareholders' equity account
c) A decrease in an asset account can be balanced by an increase in another asset account
d) One of the above

4) [2 points] In November 2017, Cisco Systems (CSCO) had a market-to-book ratio of 2.71. The stockholders' equity book value is $66.137 billion. CSCO also had $33.717 billion in short and long term debt. Cash and equivalents total $11.708 billion. CSCO's enterprise value is closest to:

a) $157 billion
b) $44 billion
c) $146 billion
d) $32 billion

5) [2 points] Which of the following statements is true regarding audit reporting?

a) The auditor's opinion should be expressed in an oral report
b) The auditor should always provide an unqualified opinion in accordance with the auditor's findings or state that an opinion cannot be expressed
c) The opinion should state whether the financial statements are presented not fairly, in all material respects, in accordance with the applicable financial reporting framework
d) The above statements are false

6) [2 points] An equity issue in the primary market from a public company is called:

a) venture capital
b) mezzanine financing
c) initial public offering (IPO)
d) seasoned equity offering (SEO)

7) [2 points] If the stock makes a dividend payment after the expiration date, then the put-call parity relation is:

a) value of put + share price = Value of call - present value (PV) of dividend + PV of exercise price
b) value of put + share price = Value of call + PV of exercise price
c) value of call + share price = Value of put - present value (PV) of dividend + PV of exercise price
d) value of call + share price = Value of put + PV of exercise price

8) [2 points] Consider the following data for a European option: Expiration = 3 months; Stock price = €110; Exercise price = €108; Put option price = €9.53; Risk-free rate = 2% per year. Using put-call parity, the price of a call option having the same exercise price and expiration date, is closest to: (Hint: Use continuous compounding.)

a) €17.82
b) €6.99
c) €12.07
d) €1.24

9) [2 points] The market value of Cisco Systems equity is $179.23 million, the market value of its debt is $33.72 million and cash is $11.71 million. If the required rate of return on the equity is 15% and that on its debt is 2.5%, calculate the company's cost of capital. (Assume no taxes.)

a) 13,78%
b) 12,21%
c) 13,04%
d) 10,78%

10) [2 points] Cisco Systems is considering investing in a new hi-Tec project related with ultra-long range WIFI transmission. The project has an economic life of four years. The annual free cash flow generated by the project is $1,500,000 per year. The initial investment totals $3,500,000. Calculate the NPV for the project if the cost of capital is 15%.

a) $4,282,468
b) $2,500,000
c) $782,468
d) $-69,481

11) [5 points] Briefly explain the sequence of events regarding a dividend payment, explaining the expected impact in the stock price.

12) [5 points] Give examples of some financial distress costs, both direct and indirect. Explain.

13) [5 points] Discuss the DuPont system to compute the Return on Equity.

14) [5 points] Briefly discuss principal-agent problems as related to a corporation.

15) [5 points] Discuss some of the advantages and disadvantages of using the payback method.

16) Briefly describe sensitivity analysis as used for project analysis.

17) [5 points] Explain the difference between a European option and an American option.

18) [5 points] State and explain MM's Proposition II.

19) [20 points] Consider the following balance sheet and income statement from Cisco Systems.

Balance Sheet

All numbers in thousands

Period Ending	**7/29/2017**	**7/30/2016**	**7/25/2015**
Current Assets			
Cash and Cash Equivalents	11.708.000	7.631.000	6.877.000
Short Term Investments	58.784.000	58.125.000	53.539.000
Net Receivables	10.002.000	10.119.000	9.835.000
Inventory	1.616.000	1.217.000	1.627.000
Other Current Assets	1.593.000	1.627.000	1.490.000
Total Current Assets	**83.703.000**	**78.719.000**	**73.368.000**
Non-Current Assets			
Long Term Investments	4.738.000	4.158.000	3.858.000
Property Plant and Equipment	3.322.000	3.506.000	3.332.000
Goodwill	29.766.000	26.625.000	24.469.000
Intangible Assets	2.539.000	2.501.000	2.376.000
Other Assets	1.511.000	1.844.000	1.516.000
Deferred Long Term Asset Charges	4.239.000	4.299.000	4.454.000
Total Non-Current Assets	**46.115.000**	**42.933.000**	**40.005.000**
Total Assets	**129.818.000**	**121.652.000**	**113.373.000**
Current Liabilities			
Accounts Payable	4.378.000	4.524.000	4.215.000
Short/Current Long Term Debt	7.992.000	4.160.000	3.897.000
Other Current Liabilities	15.213.000	16.227.000	15.300.000
Total Current Liabilities	**27.583.000**	**24.911.000**	**23.412.000**
Non-Current Liabilities			
Long Term Debt	25.725.000	24.483.000	21.457.000
Other Liabilities	2.700.000	2.355.000	3.447.000
Deferred Long Term Liability Charges	7.673.000	6.317.000	5.359.000
Total Non-Current Liabilities	**36.098.000**	**33.155.000**	**30.263.000**
Total Liabilities	**63.681.000**	**58.066.000**	**53.675.000**
Stockholders' Equity			
Common Stock	45.253.000	44.516.000	43.592.000
Retained Earnings	20.838.000	19.396.000	16.045.000
Other Stockholder Equity	46.000	-326.000	61.000
Total Stockholder Equity	**66.137.000**	**63.586.000**	**59.698.000**
Total Liabilities + Stockholder Equity	**129.818.000**	**121.652.000**	**113.373.000**

Income Statement

All numbers in thousands

Sales	7/29/2017	7/30/2016	7/25/2015
Total Sales	48.005.000	49.247.000	49.161.000
Cost of Sales	17.781.000	18.287.000	19.480.000
Gross Profit	**30.224.000**	**30.960.000**	**29.681.000**
Operating Expenses			
Research Development	6.059.000	6.296.000	6.207.000
Selling General and Administrative	11.177.000	11.433.000	11.861.000
Non-Recurring	756.000	268.000	484.000
Others	259.000	303.000	359.000
Total Operating Expenses	**18.251.000**	**18.300.000**	**18.911.000**
Operating Income or Loss	**11.973.000**	**12.660.000**	**10.770.000**
Other Income/Expenses Net	1.175.000	936.000	997.000
Earnings Before Interest and Taxes	**13.148.000**	**13.596.000**	**11.767.000**
Interest Expense	861.000	676.000	566.000
Income Before Tax	**12.287.000**	**12.920.000**	**11.201.000**
Income Tax Expense	2.678.000	2.181.000	2.220.000
Net Income	**9.609.000**	**10.739.000**	**8.981.000**

a) [15 points] Perform a Dupont Analysis of Cisco’s return on Equity over the three year period. Interpret your results.

b) [5 points] Do you need any additional data to perform a full comparative Dupont analysis? Explain.

20) [20 points] A small local subsidiary of Cisco System as the following beginning of year balance sheet:

Balance sheet at 1 January X1 (i.e. before profit appropriation by the General Assembly) (in 000 $)

Balance sheet (in thousands of $)				
Fixed assets			**Shareholders' equity**	
Manufacturing equipment		1,200	Capital	1,000
Equipment gross value	1,800		Accumulated retained earnings	400
Accumulated depreciation	-600		Net income for X0 (a)	336
Sub total		1,200	Sub total	1,736
Current Assets				
Inventories:				
Raw materials and Components		160	**Liabilities**	
Finished products		240	Financial debts	200
Accounts receivable (b)		280	Accounts payable (c)	220
Cash at bank		500	Income tax payable (c)	224
Sub total		1,180	Sub total	644
Total		2,380	Total	2,380

a) To be appropriated in X1 by the General Assembly: management recommends, and the General Assembly approves, that one quarter of the profit of X0 be distributed.

(b) To be received in X1.

(c) To be paid in X1.

The following activities occurred during period X1 (000 €):

1. Sales revenue: 2,640 (of which 210 will be received from customers during X2).
2. Purchases (raw materials): 1,040 (of which 140 will be paid cash to suppliers during X2).
3. Fee expenses: 440 (entirely paid before the end of year).
4. Communication expenses: 200 (entirely paid before the end of year).
5. Remunerations and social charges: 600 (entirely paid before the end of year).
6. Repayment of financial debt for 150. Interest expense for the year: 20 (entirely paid before the end of year).
7. Acquisition of fixed assets for 200 (entirely paid before the end of year).
8. Total depreciation for all long-lived assets (new and old): 40.
9. Stock issue with net proceeds, all in cash, amount to 200.
10. End of year inventory levels: Raw materials inventory: 120; Finished products inventory: 240.

The income tax rate is 40 percent (taxes are recognized in the year of the earnings they pertain to, and are paid in the following year. Therefore, they are considered a liability in the year to which they relate).

Prepare the two following documents for end-year X1:

a) Statement of Profit or Loss (income statement) [10 points]

b) Statement of Financial Position (balance sheet) [10 points]

ADDITIONAL SPACE TO ANSWER

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SCRAP PAPER

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