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**FIN 470: Financial Analysis in Excel**

**Exam 1**

**Sample Exam with Solutions**

There are 100 possible points. The exam has two parts: Part 1 has 10 short answer questions (5 points each), and Part 2 has 5 calculations (10 points each).

* The exam will cover Topics 1-6, i.e., through Time Value of Money.
* You have 50 minutes to complete the exam; it will close at the end of the class period.
* You must complete this exam using the Lockdown Browser.
* The password will be given at the beginning of class.
* You may not use formulae sheets, crib notes or any other external source material.
* You are permitted to use a calculator.
* To receive any credit on the calculations, you must show all work. Do the best you can to indicate formulae in the answer space, e.g., use ^ to raise a number to a power.
* In your answers, provide two decimal point accuracy for dollars, e.g., $14.13, and four decimal points for percentages, e.g., 0.0134 or 1.34%.

**Short Answers (10 Problems, 5 points each, Total: 50 points)**

**Question 1 (Short Answer, 5 points)**

What is a deferred annuity?

**It is a delayed annuity that begins after next period.**

**Question 2 (Short Answer, 5 points)**

What is one line item on a financial statement that does not contain a real cash flow?

**Examples: Depreciation, Goodwill**

**Question 3 (Short Answer, 5 points)**

What does the Excel function AVERAGEIF do?

**It calculates the average of cells that meet a criterion.**

**Question 4 (Short Answer, 5 points)**

Distinguish additive from multiplicative seasonality?

**With additive seasonality, the seasonal variations are stated in absolute/dollar terms, e.g., revenues in Q4 are $10,000 more than in Q3. With multiplicative seasonality, the seasonal variations are stated in proportionate terms, e.g., revenues in Q4 are 10% more than in Q3.**

**Question 5 (Short Answer, 5 points)**

What is the operational break-even price?

**It is the price at which EBIT is zero.**

**Question 6 (Short Answer, 5 points)**

What does it mean if a firm has a Degree of Combined Leverage of 3.0?

**It means that a percentage change in revenue will have 3 times the impact on earnings per share (EPS), e.g., a 5% increase in sales will result in a 15% increase in EPS.**

**Question 7 (Short Answer, 5 points)**

What type of Excel function could I use to find the present value of the following cash flows? (You do not need to provide the specific inputs or calculate the answer.)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | 1 | 2 | 3 | 4 |
| CF | 100 | 100 | 100 | 150 |

**NPV(Rate, Value1, Value2, …)**

**Question 8 (Short Answer, 5 points)**

In constructing *pro forma* statements what is the ‘plug?

**The plug is the line item that is adjusted to balance the balance sheet.**

**Question 9 (Short Answer, 5 points)**

What is VBA?

**VBA is Visual Basic for Applications, which is the programming language available in Excel (and other Office products).**

**Question 10 (Short Answer, 5 points)**

Distinguish a formula from a function in Excel?

**A formula is a cell entry that starts with an equal sign and performs calculations or other actions on data. A function is a predefined formula that perform calculations by using specific values.**

**Calculations (5 Problems, 10 points each, Total: 50 points)**

**Question 11 (Calculation, 10 points)**

What Excel function (including inputs) would solve the following problem? Henry has $250 in his account and adds $50/month. If his investment gets a return of 8.1%, how much is in the account in two years? (You do not need to calculate the answer.) (**Remember that for any credit you must show all your work.**)

**FV(Rate, NPer, Pmt, Pv, Type)**

**FV(0.081/12, 12\*2, -50, -250)**

**Question 12 (Calculation, 10 points)**

**Use this income statement for Questions 12 and 13:**

Construct a *pro forma* income statement for Q2 assuming sales increases by 5% and the same tax rate applies. (**Remember that for any credit you must show all your work.**)



**Question 13 (Calculation, 10 points)**

What is the degree of operating leverage in the Q1 income statement? (**Remember that for any credit you must show all your work.**)

**DOL = (Sales – Variable Cost)/EBIT**

 **= (1,000 – 700)/200 = 1.5**

**Question 14 (Calculation, 10 points)**

In Excel, how would you calculate the future value of 100 in 5 years, if you are using continuous time compounding and the rate of return is 6%? (Show all inputs, but you do not need to calculate the answer.) (**Remember that for any credit you must show all your work.**)

**Fv = 100 \* EXP(0.06 \* 5)**

**Question 15 (Calculation, 10 points)**

What is the 3-year moving average in year 2? (**Remember that for any credit you must show all your work.**)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | 1 | 2 | 3 | 4 |
| CF | 35 | 18 | 61 | 45 |

**MA = (CF1 + CF2 + CF3)/3**

 **= (35 + 18 + 61)/3 = 38**