Read the following directions very carefully. Failure to follow these directions will almost certainly result in your exam being misgraded which will adversely affect your grade. If there is anything about the directions that you do not understand, ask your instructor immediately.

1. Fill in your name, student number, and the days and time of the class for which you are registered (for example, Th at 7:15 p.m.) on the Answer Sheet as well as on the lines above.

2. Read each question very carefully. Consider all of the answer items and then select the best correct answer - there is only one best answer per question. Circle the letter answer on the exam and record your answers on the Answer Sheet (last page).

Note that only the answer sheet (page 10) will be graded!

3. You may use a financial calculator. No scratch paper (use back pages of exam if necessary), or stored formulae allowed. The course policy excludes the usage of laptops, personal digital assistants (PDA’s), text messaging systems, and similar devices.

The exam consists of 25 multiple choice questions each worth 4.0 points. Your score will be computed as: \[ 100 - (\text{number missed} \times 4.0) \]. You will have 120 minutes to complete the exam. Do not leave any answers blank - an unanswered question will be graded as a wrong answer. Good Luck!
1. Which of the following is the best description of the overall goal of the financial manager in a corporation where shares are publicly traded?

   a. Maximize earnings per share  
   b. Maximize operating income  
   c. Maximize operating cash flows  
   d. Maximize the current value of outstanding shares  
   e. Maximize the number of outstanding shares

2. A company is forecasting an increase in sales and is using the AFN model to forecast the additional capital that they need to raise. Which of the following factors are likely to increase the additional funds needed (AFN)?

   a. The company has a lot of excess capacity.  
   b. The company has a high dividend payout ratio.  
   c. The company has a lot of spontaneous liabilities that increase as sales increase.  
   d. The company has a high profit margin.  
   e. All of the answers above are correct.

3. Brown Pharmaceutical has a target fixed assets-to-sales ratio of 32.0 percent. Last year the firm operated at 84 percent of capacity with fixed assets of $900,000. What were Brown's actual sales last year?

   a. $1,451,613  
   b. $2,150,250  
   c. $2,362,500  
   d. $2,812,500  
   e. $3,348,214

4. Kulkarni & Sons recently reported sales of $320 million and net income equal to $11.2 million. The company has total assets of $150 million and current assets of $64 million. Over the next year, the company is forecasting a 25 percent increase in sales. Since the company has excess capacity, only current assets must increase in proportion to sales. The company also estimates that if sales increase 25 percent, spontaneous liabilities will increase by $6.1 million. If the company's sales increase, its profit margin will remain at its current level. The company has 10 million shares of stock outstanding and management plans to pay a dividend of $0.82 per share for the year. How much additional capital must the company raise in order to support the 25 percent increase in sales (ignore financing feedback effects)?

   a. $ 2.0 million  
   b. $ 4.1 million  
   c. $ 9.6 million  
   d. $25.6 million  
   e. None of the above is within $0.5 million of the correct answer.
5. Calculate the present value of an investment that pays $500 a year beginning 5 years from now and ending 15 years from now. The discount rate is 10%.

a. $2,098.41  
b. $2,218.11  
c. $3,072.28  
d. $3,104.61  
e. $2,016.46

6. What is the original amount borrowed of a 13-year loan with an 11% nominal interest rate that requires the following repayment schedule:

- $15,000 per year for the first 6 years (with the first payment made one year from today)
- $20,000 per year for the following 3 years
- $25,000 per year for the remaining 4 years

a. $189,893.50  
b. $119,908.83  
c. $64,378.56  
d. $59,712.96  
e. $220,315.68

7. Consider three investment alternatives: a perpetuity, an ordinary annuity, and an annuity due. All three have the same payment amount. The annuity due and the ordinary annuity have the same number of payments and the number of payments is greater than one. The interest rate is positive and the same for all three investments. Given this information which of the following statements is correct?

a. The present value of the perpetuity is less than the present value of the ordinary annuity.
b. The perpetuity and the ordinary annuity have the same present value.
c. The ordinary annuity and the annuity due have the same present value.
d. The present value of the ordinary annuity is less than the present value of the perpetuity.
e. The present value of the annuity due is less than the present value of the ordinary annuity.
8. What is the value at the end of year 4 of a perpetuity that promises payments of $6,345 a year starting end of year 9 if the discount rate is 5%?
   a. $ 81,801
   b. $ 99,429
   c. $104,401
   d. $126,900
   e. $18

9. You’ve just purchased your new 2005 automobile for $31,500. The dealer gave you $5,000 for your trade-in and financed the remaining balance at a nominal annual rate of 2.9% compounded monthly for 48 months. How much will you owe immediately after making the 36th payment?
   a. $6,915.56
   b. $8,220.38
   c. $10,439.87
   d. $24,932.17
   e. $15,638.97

10. A 10-year bond has a 10 percent annual coupon and a yield to maturity of 12 percent. The bond can be called in 5 years at a call price of $1,050 and the bond’s face value is $1,000. Which answer best describes the above situation?
   a. The bond’s current yield is greater than 10 percent.
   b. The bond’s yield to call is less than 12 percent.
   c. The bond is selling at a price below par.
   d. Both answers a and c are correct.
   e. None of the above answers is correct.

11. Five years ago, Romano, Inc. issued 10,000 (Ten Thousand) 20-year, $1,000 par value bonds at par. At that time the market rate for such bonds was at 8%. The coupon is paid annually. Today the actual market value of all the bonds together is $11,942,450. What is the yield to maturity of these bonds today?
   a. 6.0%
   b. 6.27%
   c. 6.70%
   d. 8.0%
   e. There is not enough information provided to answer this question.
12. If interest rates fall from 8 percent to 7 percent, which of the following bonds will have the largest price increase in its value?

a. A 10-year zero coupon bond.
b. A 10-year bond with a 10 percent annual coupon.
c. A 5-year zero coupon bond.
d. A 5-year bond with a 10 percent annual coupon.
e. A 1-year zero coupon bond.

13. A bond that currently sells for $1,167.89 has a par value of $1,000 and an annual coupon rate of 11%. The bond makes semi-annual coupon payments and the appropriate discount rate for the bond (i.e., the bond’s yield to maturity) is 9%. How many years does this bond have remaining until it matures?

a. 8 years
b. 12 years
c. 16 years
d. 24 years
e. 32 years

14. If an analyst uses the constant dividend growth model to value a stock, which of the following (holding everything else constant) is certain to cause the analyst to decrease her estimate of the current value of the stock?

a. Increasing the estimate of the amount of next year’s dividend.
b. Increasing the required rate of return for the stock.
c. Increasing the expected dividend growth rate.
d. All of the above (a, b, and c) would cause the analyst to decrease her estimate.
e. None of the above (a, b, or c) would cause the analyst to decrease her estimate.

15. Sarpong Brothers, Inc. just paid a $2.00 annual dividend (that is, D₀ = 2.00). Investors believe that the dividends will grow at a rate of 10% per year forever. Assuming a discount rate of 14%, what is the equilibrium current price of this stock?

a. $45.00
b. $50.00
b. $55.00
d. $60.00
e. None of the above listed answers is within $1.00 of the correct answer.
16. Venneman Company is experiencing a period of rapid growth. Earnings and dividends are expected to grow at a rate of 18 percent during each of the next two years, 15 percent in the third year, and at a constant rate of 6 percent annually thereafter. Venneman’s last dividend, which has just been paid, was $1.15. If the required rate of return on the stock is 12 percent, what is the price of the stock today?

a. $25.08
b. $25.70
c. $26.95
d. $27.50
e. $28.09

17. TOMA Corporation has had dividends grow from $2.00 per share to $4.00 per share over the last 10 years (the $4.00 per share dividend was paid yesterday). This compounded annual growth rate in dividends is expected to continue well into the foreseeable future. If the current market price of TOMA’s stock is $18.00 per share, what rate of return do investors expect to receive from buying TOMA stock?

a. 7.18%
b. 22.22%
c. 23.82%
d. 30.99%
e. None of the above is within 25 basis points (a basis point is 1/100th of a percent) of the correct answer.

18. Rankin Aircraft is considering a project which has an up-front cost paid today at t = 0. The project will generate positive cash flows of $60,000 a year for the next five years (the first cash flow occurs at the end of year 1). The project’s NPV is $75,000 and the required rate of return is 10 percent. What is the project’s payback period (assume cash flows are generated evenly through each year)?

a. 3.22 years
b. 1.56 years
c. 2.54 years
d. 0.85 years
e. 4.16 years
19. A real estate developer wants to use a corner lot she owns, to either set up a gas station or construct an apartment building. The required rate of return is 10%. Using a four-year planning horizon, she does a comparative cash flow analysis of the two alternatives:

<table>
<thead>
<tr>
<th>Year</th>
<th>Gas Station</th>
<th>Apartment building</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>- $100</td>
<td>- $100</td>
</tr>
<tr>
<td>1</td>
<td>50</td>
<td>20</td>
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<td>2</td>
<td>40</td>
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<tr>
<td>3</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td>60</td>
</tr>
</tbody>
</table>

a. Select the gas station since its IRR is greater.
b. **Select the apartment building since its NPV is greater.**
c. Select neither since NPV and IRR give opposite decisions.
d. Select the apartment building since its IRR is greater.
e. Select the gas station since its NPV is greater.

20. The Radcliffe Corporation has been presented with an investment opportunity which will yield end-of-year cash flows of $30,000 per year in Years 1 through 4, $35,000 per year in Years 5 through 9, and $40,000 in Year 10. This investment will cost the firm $150,000 today, and the required rate of return is 10 percent. What is the NPV for this investment?

a. $135,984
b. $18,023
c. $219,045
d. **$51,138**
e. $92,146

21. A normal project which has a NPV greater than zero will also:

I. Have a payback period less than its life.
II. Have an IRR greater than the required return.
III. Have a profitability index (PI) greater than one.

a. I and III only
b. II and III only
c. **I, II and III**
d. II only
e. None of the above
USE THE FOLLOWING INFORMATION TO ANSWER QUESTIONS 22 TO 24

Your firm is considering investing in a project, the details of which are given below:

- A new machine costing $10,000 is required.
- The project also requires an initial net working capital of $1,000, which will be recovered at the end of the project life (year 3).
- The new machine is being depreciated using the 7-year MACRS rates (Rates are 14%, 25%, 17%, 13%, 9%, 9%, 9%, 4%).
- The new machine can be sold at the end of the project (end of year 3) for $5,000.
- The project will generate earnings before depreciation, interest, and taxes (EBDIT) of $4,000 a year over the next 3 years.
- The firm's tax rate is 40%.

22. What will be the initial investment in year 0?
   
   a. $11,000  
   b. $10,000  
   c. $9,000  
   d. $5,000  
   e. None of the above

23. What is the post-tax operating cash flow in year 1?
   
   a. $2,960  
   b. $2,932  
   c. $2,440  
   d. $2,398  
   e. $1,840

24. What is the non-operating cash flow in year 3?
   
   a. $5,760  
   b. $5,880  
   c. $4,760  
   d. $1,480  
   e. $6,240
25. When estimating project cash flows,

a. Ignore sunk costs and interest costs
b. Ignore opportunity costs
c. Ignore project interactions
d. Ignore the depreciation tax shield
e. All of the above