SAMPLE FACT EXAM

(You must score 70% to successfully clear FACT)

1. What is the present value (PV) of $100,000 received five years from now, assuming the interest rate is 8% per year?
   a. $600,000.00
   b. $68,058.32
   c. $73,502.99
   d. $82,609.42

2. Erin places $200 in a savings account that pays 7% interest, compounded monthly. How much will she have in the account in three years?
   a. $236.00
   b. $238.20
   c. $245.00
   d. $246.59

3. Your grandmother bought a house 40 years ago for $20,000. Today she sold the house for $92,000. What was your grandmother's rate of return (annual) on this investment?
   a. 3.89%
   b. 4.54%
   c. 4.67%
   d. 10.16%

4. Kenneth has $10,000 he is placing in a savings account that pays 6% interest, compounded annually. If Kenneth makes no additional deposits and no withdrawals, how long would it take to grow the account to $25,000?
   a. 11.13 years
   b. 13.5 years
   c. 14.27 years
   d. 15.73 years

5. Sam just took out a $15,000, four-year loan to buy a new car. If the interest rate on the loan is 8% APR compounded monthly, what will Sam's <u>monthly</u> car payments be?
   a. $366.19
   b. $4528.81
   c. $377.40
   d. $1230.60

6. Rachel is due to receive two payments from an insurance company. She will get $1,000 exactly one year from today, and $2,000 two years from today. Instead of the two payments, the insurance company is willing to settle the account by making one lump-sum payment to Rachel today. The insurance company applies a 6% discount rate for the one year cash flow and a 8% discount rate for the two-year cash flow. What dollar amount will Rachel receive today?
   a. $2,712
   b. $2,750
   c. $2,675
   d. $2,658
   e. $3,000

7. As the discount rate increases without limit, the present value of a future cash flow
   a. approaches infinity
   b. remains unchanged
   c. approaches zero
   d. approaches negative infinity

8. A perpetuity will pay $1,000 per year, starting 5 years after the perpetuity is purchased. What is the present value of this perpetuity on the date that it is purchased, given that the interest rate is 4%?
   a. $1,410
   b. $20,582
   c. $21,370
   d. $34,604

9. Your friend Barbara has a bond that she would like to sell to you. The bond matures in 10 years, has a face value of $1,000 and a coupon interest rate of 6% (paid annually). If you know that the yield to maturity on similar bonds is 8%, what is the maximum price you would be willing to pay for the bond?
   a. $865.80
   b. $940
   c. $1000
   d. $1,147.20

10. A coupon bond which pays interest of $60 annually, has a par value of $1,000, matures in 5 years, and is selling today for $915.48. The yield to maturity on this bond is approximately __________.
   a. 6%
   b. 7%
   c. 8%
   d. 9%

11. Dividends-R-Us, Corp. is paying a dividend of $3 a share today. It is expected that the company will continue its policy of increasing its dividend 8% a year every year. If you require a 14% rate of return to invest in this company, what is the maximum amount you would be willing to pay for a share of the company's stock?
   a. $30.86
   b. $50.00
   c. $51.33
   d. $54.00

12. A firm is planning on paying its first dividend of $2 in three years. After that dividends are expected to grow at 6% per year indefinitely. The stock's required return is 14%. What is the value of a share today?
   a. $25.00
   b. $16.87
   c. $19.24
   d. $20.99

13. XYZ Corp's common stock can be purchased today for $32.25. It is expected to pay $4.25 in dividends next year. You can sell the stock for $38.50 right after receiving the dividend next year. What is the expected return if you purchase the stock today? (Choose the nearest number)
   a. 11%
   b. 13%
   c. 19%
   d. 33%

14. XYZ Corp has the same amount of sales every day. Thirty percent (30%) of its customers pay cash immediately upon purchase. Forty percent (40%) of the customers take discount and pay-up on the 10th day after sale. The remaining 30% of the customers pay in exactly 40 days. What is the average days sales outstanding (DSO)?
   a. 15 days
   b. 12 days
   c. 30 days
   d. 18 days
   e. 16 days

15. SAT-Corp. is considering the purchase of a new piece of machinery that will cost them $1,800,695 today (in 2010). This piece of machinery, however, will increase the company's after-tax cash flows by $500,000 in 2011, $750,000 in 2012, $1,000,000 in 2013. If SAT-Corp.'s discount rate (WACC) is 10%, then the NPV of making this purchase is
   a. $449,305
   b. $243,896
   c. $25,000
   d. -$1,760,000

16. ABC Corp is considering undertaking a new project. The project is expected to have an IRR of 14%. ABC Corp
   a. Should undertake this project if its Return on Assets (ROA) is less than 14%.
   b. Undertake this project since the company has already spent $20,000 analyzing whether this project is feasible.
   c. Should undertake this project if its WACC is less than 14%.
   d. Should undertake this project if its Net Profit Margin exceeds 14%.
   e. Should undertake the project if its WACC exceeds 14%.

17. What is the internal rate of return of a project costing $3,000; having after-tax cash flows of $1,500 in each of the two years of its two-year life; and a salvage value of $800at the end of the second year in addition to the $1,500 cash flow? (rounded to the nearest percentage)
  a. 13%
  b. 15%
  c. 16%
  d. 19%

18. Which of the following is the BEST description of the goal of the financial manager of a public corporation?
  a. Maximize the shareholders' wealth by maximizing share value
  b. Maximize profits
  c. Maximize the number of outstanding shares
  d. Keep share price stable
  e. Maximize market share

19. Which of the following is a "source of cash" to the firm?
  a. Increase in fixed assets
  b. Increase in accounts receivable
  c. Reduction in the equity account
  d. Reduction of inventory
  e. None of the above are a source of cash

20. Break-even analysis is a technique for determining that point at which sales will just cover
  a. total costs
  b. variable costs
  c. fixed costs
  d. sunk costs
  e. direct costs

21. You own a portfolio. You are considering buying another stock to add to the portfolio. In which of the following situations would you get the largest amount of risk reduction?
  a. Stock ABC: This stock's return moves in the same direction as your portfolio's return.
  b. Stock DEF: This stock's return is independent of the movement in your portfolio's return.
  c. Stock LMN: This stock's return moves in an opposite direction to your portfolio's return.
  d. Stock XYZ: This stock provides a very low risk-free return of 1% per year.

22. Currently, the risk-free rate of return is 10% and the expected return on the market portfolio (r_m) is 20%. The stock of GHJ Corp. has a beta (β) of 1.8. The expected return of the stock, based on the CAPM would be
  a. 38%
  b. 28%
  c. 18%
  d. 10%

23. Currently, the expected return on the market portfolio (r_m) is 13%. The stock of XYZ Corp. has a beta (β) of 1.2. The expected return of the stock, based on the CAPM is 15%. What is the risk-free rate?
  a. Between 0% to 2.5%
  b. Between 2.51% to 4%
  c. Between 4.01% to 6.5%
  d. More than 6.5%

24. Increasing the percentage of debt in a firm's (or project's) capital structure has the effect of:
  a. increasing the risk of the firm (project)
  b. decreasing the risk of the firm (project)
  c. not changing the risk of the firm (project)
  d. cannot tell without more information

25. A current ratio that is above average and a quick (acid-test) ratio that is below average would indicate that the firm
a. is using too much debt financing
b. should tighten-up its credit policy
c. is not keeping its costs under control
d. is holding excessive inventory
e. None of the above -- the Current ratio and Quick ratio measure the same thing.

26. Consider ABC Corp. The firm had sales of $2 million last year with a net profit margin of 6%. It's total assets last year was $1 million. What is the firm's return on assets (ROA)?
   a. Less than 5%
   b. Between 5% and 7%
   c. Between 7% and 9%
   d. Between 9% and 11%
   e. More than 11%.
27. Kooks Inc. needs to free-up some cash by managing its inventories. Currently, Kooks has annual cost of goods sold of $1,600,000 and an average inventory balance of $450,000. How much cash will become available if Kooks can shorten its average age of inventory by (8) eight days? (365 days in a year, choose the nearest thousand number).
   a. $ 35,000
   b. $ 56,000
   c. $ 137,000
   d. $ 200,000
   e. None of the above

Use the financial statements for ABC Corp. shown below to answer questions 24 – 25. First compute and fill in the blank squares for EBIT, EBT, Taxes, and EAT or Net Income.

INCOME STATEMENT FOR ABC CORP FOR 2010

Sales	$100.00
Cost of Goods Sold	$50.00
Depreciation	<u>$10.00</u>
Earnings Before Interest and Taxes (EBIT)	-------
Interest	<u>$15.00</u>
Earnings Before Taxes (EBT)	-------
Taxes (@30%)	-------
Earnings After Taxes (EAT) or Net Income	-------

28. The Net Income for ABC Corp. in 2010 based on the information given above is:
   a. $ 7.50
   b. $ 15.00
   c. $ 17.50
   d. $ 25.00
   e. $ 27.50

29. The Operating Cash Flow for ABC Corp. in 2009 based on the information given above is:
   a. $ 7.50
   b. $ 15.00
   c. $ 17.50
   d. $ 25.00
   e. $ 42.50

30. An unusually low turnover of accounts receivable, which implies a very long average collection period (or days' sales outstanding), could indicate that the firm
   a. Is very easy in its credit policy
   b. Is very easy in its collection policy
   c. Offers very little discount and thus encourages late payment
   d. All of the above

SOLUTION TO SAMPLE FACT EXAM

1.	FV = 100,000; N = 5; I = 8%.	PV = $68,058.32	**b**
2.	PV = 200; Annual Interest 7%; monthly rate = 7%/12; N = 36; FV = $246.59		**d**
3.	PV = 20,000; N =40; FV= -92,000	I = 3.89%	**a**
4.	PV = 10,000; I = 6%; FV = -25,000	N =15.725	**d**
5.	PV = 15,000; APR = 8%; I = 8%/12; N = 48	PMT = 366.19	**a**
6.	CF1 = 1,000 I=6%; CF2 = 2,000 I = 8%; PV = PV1 + PV2 = 943.40 + 1,714.68 = 2,658.08		**d**
7.	High discount rate reduced the present value; infinity discount rate gives zero PV		**c**
8.	First cash flow from the perpetuity starts end of year 5. Value of Perpetuity at the end of year 4 = $1,000/ 4% = $25,000. Now; FV = 25,000; I =4%; N = 4; PV = $21,370		**c**
9.	FV = 1,000; N = 10; PMT = 60; I = 8%	PV = 865.80	**a**
10.	FV = 1,000; N = 5; PMT = 60; PV = -915.48	I = YTM = 8.12%	**c**
11.	D_0 = $3.00; g = 8%; k = 14%; P_0 = D_1/ (k – g); D_1 = $3.00 *(1+.08) = $3.24; P_0 = 3.24/6%		**d**
12.	D_3 = $2.00; g = 6%; k = 14%; P_2 = $2.00/(14% - 6%) = $25.00; FV = 25; I = 14; N =2; PV = $19.24		**c**
13.	D_1 = $4.25; P_1 = 38.50; P_0 = 32.25	HPR = [(D_1 + P_1) / P_0] - 1 = 32.56%	**d**
14.	30% * 0 + 40% * 10 + 30% * 40 = 16 days		**e**
15.	NPV (.10; 500,000; 750,000; 1,000,000) – 1,800,695	NPV = $25,000	**c**
16.	Accept if IRR is greater than the Weighted Average Cost of Capital (WACC)		**c**
17.	**IRR**		**c**
18.	Value maximization		**a**
19.	Reduce inventories and generate cash		**d**
20.	Breakeven when all the costs are covered		**a**
21.	Movement in the opposite directs is negative correlation. Gives diversification benefits		**c**
22.	k = 10% + 1.8 * [20% - 10%] = 28%		**b**
23.	15% = r + 1.2* [13% - r] = r + 15.6% - 1.2r = 15.6% - 0.2r; or 0.2r = 15.6%-15% = 0.6%; r = 3%		**b**
24.	Leveraging increases risk		**a**
25.			**d**
26.	Net profit Margin = 6% = Net Income / Sales = Net Income / $ 2 million; So, Net Income = $120,000 ROA = Net Income / Total Assets = $120,000 / $1,000,000 = 12%		**e**
27.	Days COGS in Invy = (450K*365/1.6m) = 102.66; new days = 94.66 = (new inv*365/1.6m) New inv = (1.6m*94.66/365) = 414,930; change in invy = 450 – 414.93 = 35,052		**a**
28.	Net Income = $17.50		**c**
29.	EBIT + Depreciation -Taxes = $40 + $10 – $7.5= $42.5		**e**
30.			**d**