Faculty of Management Sciences

Financial Management I

FAC210/FIN201

FALL2019

Final Revision

1) Colin has inherited $6,000 from the death of Grandma Anna. He would like to use this money to buy his mom Hayley a new scooter costing $7,000 2 years from now. Will Colin have enough money to buy the gift if he deposits his money in an account paying 8 percent compounded semi-annually?

2) A college received a contribution to its endowment fund of $2 million. They can never touch the principal, but they can use the earnings. At an assumed interest rate of 9.5 percent, how much can the college earn to help its operations each year?

3) Calculate the present value of $800 received at the beginning of year 1, $400 received at the beginning of year 2, and $700 received at the beginning of year 3, assuming an opportunity cost of 9 percent.

4) You have been offered a project paying $300 at the beginning of each year for the next 20 years. What is the maximum amount of money you would invest in this project if you expect 9 percent rate of return to your investment?

5) If you expect to retire in 30 years, are currently comfortable living on $50,000 per year and expect inflation to average 3% over the next 30 years, what amount of annual income will you need to live at the same comfort level in 30 years?

6) A generous benefactor to the local ballet plans to make a one-time endowment which would provide the ballet with $150,000 per year into perpetuity. The rate of interest is expected to be 5 percent for all future time periods. How large must the endowment be?

7) Jia has just won a $20 million lottery, which will pay her $1 million at the end of each year for 20 years. An investor has offered her $10 million for this annuity. She estimates that she can earn 10 percent interest, compounded annually, on any amounts she invests. She asks your advice on whether to accept or reject the offer. What will you tell her? (Ignore Taxes)

8) Find the future value at the end of year 3 of the following stream of cash flows received at the end of each year, assuming the firm can earn 8 percent on its investments.

Year	Amount
1	$10,000
2	16,000
3	19,000

9) If Blue took a loan from a bank today for an amount of $100,000, as to be received in 10 years, assuming an opportunity cost of 10%. What is the annual equal payment that should Blue receive each year?

10) $100 is received at the beginning of year 1, $200 is received at the beginning of year 2, and $300 is received at the beginning of year 3. If these cash flows are deposited at 12%, calculate their combined future value at the end of year 3.

11) Fred has inherited $6,000 from the death of Barney. He would like to use this money to buy his wife Wilma a new rock mobile costing $7,000 for their 10th anniversary celebration which will take 2 years from now. Will Fred have enough money to buy the gift if he deposits his money in an account paying 8% compounded quarterly?

12) A wealthy industrialist wishes to establish a $2,000,000 trust fund which will provide income for his grandchild into perpetuity. He stipulates in the trust agreement that the principal may not be distributed. The grandchild may only receive the interest earned. If the interest rate earned on the trust is expected to be at least 7 percent in all future periods, how much income will the grandchild receive each year?

13) Nico establishes a seven-year, 8 percent loan with a bank requiring annual end-of-year payments of $960.43. Calculate the original principal amount.

14) Mr. Knowitall has been awarded a bonus for his outstanding work. His employer offers him a choice of a lump-sum of $5,000 today, or an annuity of $1,250 a year for the next five years. Which option should Mr. Knowitall choose if his opportunity cost is 9 percent?

15) Zina Telephone has paid the dividends shown in the following table over the past 6 years.
The firm's dividend per share next year is expected to be US$3.02.

a. If you can earn 13% on similar-risk investments, what is the most you would be willing to pay per share?

b. If you can earn only 10% on similar-risk investments, what is the most you would be willing to pay per share?

Year	Dividend per share
2012	US$2.87
2011	2.76
2010	2.60
2009	2.46
2008	2.37
2007	2.25

16) Nassir Motors' common stock currently pays an annual dividend of US$1.80 per share. The required return on the common stock is 12%. Estimate the value of common under each of the following assumptions about the dividend.
   a. Dividends are expected to grow at an annual rate of 0% to infinity.
   b. Dividends are expected to grow at an annual rate of 5% to infinity.

17) Lawrence Industries' most recent annual dividend was $1.80 per share, and the firm's required return is 11%. Find the market value of Lawrence's shares when:

a. Dividends are expected to grow at 8% annually for 3 years, followed by a 5% constant annual growth rate in years 4 to infinity.

b. Dividends are expected to grow at 8% annually for 3 years, followed by a 0% constant annual growth rate in years 4 to infinity.

c. Dividends are expected to grow at 8% annually for 3 years, followed by a 10% constant annual growth rate in years 4 to infinity.

18) High-style Footwear wishes to assess the value of its Active Shoe Division. This division has debt with a market value of US$12,500,000 and no preferred stock. Its weighted average cost of capital is 10%. The Active Shoe Division's estimates free cash flow each year from 2013 through 2016 is given in the following table. Beyond 2016 to infinity, the firm expects its free cash flow to grow at 4% annually.

Year(t)	Free cash flow(FCF_t)
2013	US$ 800,000
2014	1,200,000
2015	1,400,000
2016	1,500,000

a. Use the free cash flow valuation model to estimate the value of High-style's entire Active Shoe Division.

b. Use your findings in part a along with the data provided above to find this division's common stock value.

c. If the Active Shoe Division as a public company will have 500,000 shares outstanding, Use your findings in part b to calculate its value per share.

19) For each firm estimate its common stock value employing price/earnings (P/E) multiples.

Firm	Expected EPS	P/E multiple
A	US$ 3.00	6.2
B	4.50	10.0
C	1.80	12.6

20) In preparation for the quarterly cash budget, the firm had sales of $3,000,000 in August, and $4,500,000 in September. Forecast sales for October, November and December are $1,000,000 and $1,500,000 and $2,000,000 respectively. The firm has a beginning cash balance in October of $100,000 and maintains a minimum cash balance of $200,000. Prepare and evaluate a cash budget for the months of October, November, and December based on the following assumptions.

- The firm collects 60 percent of sales for cash and 40 percent of its sales one month later.
- Interest income of $50,000 will be received in December.
- The firm has purchases of $3,500,000 in August, 2,000,000 in September, $500,000 in October, $750,000 in November, and $1,000,000 in December.
- The firm pays cash for 40 percent of its purchases.
- The firm pays for 60 percent of its purchases the following month.
- Salaries and wages amount to 15 percent of the previous month's sales.
- Sales commissions amount to 2 percent of the previous month's sales.
- Rent payments of $100,000 must be made each month.
- A principal and interest payment on an outstanding loan is due in December of $150,000.
- The firm pays dividends of $50,000 at the end of the quarter.
- Fixed assets costing $600,000 will be purchased in December.
- Depreciation expense each month of $45,000.

21. Loan Amortization Problems:

a. As just stated, you want to determine the equal annual end of year payments necessary to amortize fully a US$ 6,000 of 10% loan over 4 years. Prepare a loan amortization schedule showing the interest and the principle of each of the 4 loan payments.

b. As just stated, you want to determine the equal annual end of year payments necessary to amortize fully a US$ 100,000 of 9% loan over 4 years. Prepare a loan amortization schedule showing the interest and the principle of each of the 4 loan payments.

GOOD LUCK!