Problem 1

Income bonds do share some characteristics with preferred stock. The primary difference is that interest paid on income bonds is tax deductible while preferred dividends are not. Income bondholders also have prior claims on the assets, if the firm goes bankrupt. In calculating cost of capital, the primary difference again will be that the cost of income bonds will be lower, because of the tax savings.

Problem 2

Commodity bonds are different from straight bonds because the interest payments on these bonds is not fixed but varies with the price of the commodity to which they are linked. There is more risk, therefore, to the holder of these bonds. It is different from equity since the cash flows are constrained. Even if the commodity's price does go up, the payments on the commodity bond will go up only by the defined amount, whereas equity investors have no upside limit. Commodity bondholders also have prior claims on the assets of the firm if the firm goes bankrupt. I would treat commodity bonds as debt, but recognize that it is also debt that creates less bankruptcy risk if the firm gets into trouble due to commodity price movements.

Problem 3

The first characteristic - a fixed dividend and a fixed life - is a characteristic of debt, as is the last one - no voting rights. The other two - no tax deductions and secondary claims on the assets - make it more like equity. In fact, this security looks a lot like preferred stock, and I would treat it as such.

Problem 4

Value of Straight Preferred Stock portion of Convertible = 6/.09 = $ 66.67 ! Perpetual Life
Value of Conversion Portion = $ 105 - $ 66.67 = $ 38.33

Problem 5

Value of Equity = $ 50 million
Value of Straight Debt = $ 25 million
Value of Straight Debt portion of Convertible =20000*($ 50 (PVA,8%,10) + $ 1000/1.08^10)
$ 15,973,951
Value of Conversion portion (Equity) = (20,000*1100)-$15,973,951 = $ 6,026,049
Value of All Equity = $ 50 million + $ 6.033 million = $ 56.03 million
Value of All Debt = $ 25 million + $ 15.97 million = $ 40.97 million
Debt Ratio = (40.97/(40.97+56.03)) = 42.24%

Problem 6

Value of Equity = 50,000 * $ 100 + 100,000 * $ 90 = $ 14,000,000
Value of Debt = $ 5 million
Debt Ratio = 5/(5+14) = 26.32%
Since the debt was taken on recer

Problem 7

a. Since you are a small firm, you should consider the reputation of the investment banker. A more reputable investment banker may be able to attract wary investors into the offering. If you are a high technology or bio technology firm, where technical knowledge may be essential in the valuation process, you should pick an investment banker with some experience with similar issues.

b. If the issue is fairly priced, 40% of the firm (20/50).

c. If the investment banker underprices the issue, you will have to sell

Value of Securities Sold = $ 20/.9 = $ 22.22

As % of Overall Firm Value = 22.22/50 = 44.44%

d. You would have to sell roughly 2 million shares: ($ 50 million/2 million = $ 25)

Problem 8

a.

Number of share you would need to sell in rights offering = $ 100 mil/$ 25 = 4 million

Number of shares outstanding = 10 million

You would need 5 rights to buy two shares.

b. Ex-rights price = (50*10+25*4)/14 = $ 42.86

c. Value per Right = Pre-rights price - Ex-rights price = $ 50 - $ 42.86 = $ 7.14

d. If the price of the right were higher than $ 7.14, I would sell my rights at the higher price and keep the difference as excess return. The stock price after the rights issue and the cash will yield me more than what I paid for the stock which was $ 50.

Problem 9

This statement is not true. First, on a market value basis, U.S. firms are not more heavily dependent on debt than firms in other countries. Second, equity includes not just external equity (which U.S. firms are relucatant to use) but internal equity. When the fact that U.S. firms have more internal equity to invest is considered than firms in faster growth economies, the debt ratios do not look as high.

Problem 10

a. Expected Stock Price = (1 million * $ 15 + 500,000 * $ 10)/1.5 million = $ 13.33

b. Price per Right = $ 15 - $ 13.33 = $ 1.67

c. No, because I will own more shares after the issue.

Problem 11

a. Not necessarily, because it does not factor in how much risk investment bankers take in the process and what they invest.

b. Not necessarily. Investors will end up with portfolios that are over-weighted with the overvalued IPOs.

c. No. An overpriced issue may maximize the proceeds from the initial offering but may not make sense especially if only a fraction of the outstanding stock is issued at the initial offering.

d. It might be, especially given the fact that the underpricing is greatest for small stocks with significant uncertainty.

e. Again , it might operate as a promotion. The favorable publicity may induce others to buy the subsequent offerings.

Problem 12

Convertible bonds are best suited for firms with (a) limited cash flows, (b) high growth opportunities and (c) substantial potential for conflict between stockholders and bondholders in terms of investment and financing decisions. Small, high growth firms possess all of these characteristics.

Problem 13

Not necessarily. The coupon rate is lower on convertible debt but it also includes a valuable conversion option. I would value the conversion option before I concluded that convertible debt was cheaper.

Problem 14

Value of Common Stock = 1 million * 50 = $ 50 million
Value of Warrants = 200,000 * $ 12 = $ 2.4 million
Value of Straight Debt = $ 250 million
Value of Straight Debt portion of Convertible Debt = 20,000 *(60*(PVA,9%,20)+1000/1.09^20) = $ 14.52 million
Value of Conversion Option (Equity) = 20,000 * 1000 - $ 14.52 million = 5480000
Value of Debt = $ 250 + $ 14.52 = $ 264.52 million
Value of Equity = $ 50 + $ 2.4 + $ 5.48 million = $ 57.68 million
Debt Ratio = 264.52/(264.52+57.68) = 82.10%

Problem 15

While venture capitalists may demand a disproportionate share of the ownership, this may reflect the higher risk that they face. Furthermore, many of these firms would not have been able to raise needed funds if venture capitalists had been unwilling to step in and provide it.

Problem 16

Bank debt may be preferable for those companies which have substantial private information on their riskiness (or lack of it). While they may not be willing to reveal this information to bond markets (where even competitors could observe it), they may be willing to reveal it to a bank (where there is a greater chance of confidentiality).

Problem 17

I do not think so. The fixed claims that preferred stockholders have make them more like debt. If the preferred stock is cumulative, I would treat it more like debt.

Problem 18

Interest is tax deductible, whereas preferred dividends are not. This statement is generally true.