**Problems:**

1. You intend to purchase a 20-year, $1,000 face value bond that pays interest of $35

every 6 months. If your nominal annual required rate of return is 9.5 percent with

semiannual compounding, how much should you be willing to pay for this bond?

***(7 points)***

**Bond value:** \_\_\_\_\_\_\_\_\_

2. ABC Corporation has outstanding bonds with an annual 8.0 percent coupon.

Interest is paid semiannually. The bonds have a par value of $1,000 and a price of

$1,150. The bonds will mature in 15 years. What is the yield to maturity on the

bonds? ***(8 points)***

**Yield to maturity:** \_\_\_\_\_\_\_\_\_\_

3. The common stock of ABC Corporation is selling for $35. The stock recently paid

dividends of $2.70 per share and has a projected constant growth rate of 5.50%. If

you purchase the stock at the market price, what is your expected rate of return?

***(7 points)***

**Expected rate of return**: \_\_\_\_\_\_\_\_\_\_

4. ABC Corporation recently paid a dividend of $2.50 per share, and the company

will experience a non-constant growth of 25% for the next three years and the

constant growth rate of 6% will start at the end of the third year. The company’s

beta equal is 1.35, the required rate of return on the market is 10%, and the riskfree

rate is 3.5%. What should be the fair price of the ABC’s stock? ***(8 points)***

**Stock price: $\_\_\_\_\_\_\_\_\_\_**

5. An analyst is interested in using the Black-Scholes model to value call options on

the stock of ABC Inc. The analyst has accumulated the following information:

The price of the stock is $28.

The strike price is $32.

The option matures in 3 months (t = 0.25).

The standard deviation of the stock’s returns is 0.40 and the variance is 0.16.

The risk-free rate is 5 percent.

Given this information, calculate the fair value of the call option using the Black-

Scholes model. ***(10 points)***

**Call Option Value: $\_\_\_\_\_\_\_\_\_\_\_\_\_**

6. ABC Corporation plans to maintain its debt structure in the future. The firm has

35 percent debt, 10 percent preferred stock, and 55 percent equity in their capital

structure. ABC has outstanding bonds with an annual 9 percent coupon and pays

interest on a semiannual basis. The bonds have a par value of $1,000, market

price of $1,100, and maturing in 20 years. The firm has a preferred stock with a

par value of $30, a dividend rate of 10%, a floatation cost of $1.75, and a market

price of 50. The market price of the company’s common stock is $35, common

dividends are $3.50, constant growth is 5.0 percent, and the stock’s beta is 1.20.

The risk-free rate is 5.0%, the market returns are 13.0 percent, and the risk

premium is 8.0 percent. What is the company’s weighted average cost of capital

if the marginal tax rate is 35 percent? ***(10 points)***

**Weighted Average Cost of Capital:** \_\_\_\_\_\_\_\_\_\_\_\_\_

7. ABC Corporation is considering the purchase of a new machine which will reduce

manufacturing costs by $75,000 annually (cash inflows). ABC expects to sell the

machine at the end of its four year operating life for $35,000. ABC’s marginal tax

rate is 35%, and it uses a 10 percent cost of capital to evaluate projects of this

nature. If the machine costs $195,000, should the project be accepted? ***(10 points)***

**PBP:** \_\_\_\_\_\_\_\_\_**NPV: $\_\_\_\_\_\_\_\_\_\_\_\_\_ IRR \_\_\_\_\_\_\_\_ %**

**Decision:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

8. The project being considered by the firm are mutually exclusive and have the

following projected cash flows: ***(10 points)***

Year Project X Project Y

0 ($350,000) ($350,000)

1 175,000 150,000

2 175,000 0

3 175,000 375,000

Based on the information given, which of the two projects would be preferred,

and why?

**Project:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_