Student ID.....

EE431 Economics of Financial Markets and Institutions
Problem Set 1: Debt Market and Structure of Interest Rate

Please submit at the BE office, 5th floor department of Economics building.

Deadline of submission : Friday, September 9, 2016, before 15.00 hrs.

Late submission will not be accepted.

1. Describe the time value of money concept and how it affects your investment programs.

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2. The relationship between a bond's coupon rate, the yield required by the market and the bond's price relative to par value is as follows:

   - Coupon rate $<$ yield required by market $\rightarrow$ price ..... par value ($>$, $<$, $\leq$, $\geq$ or $=$), the bond is sold at .....
   - Coupon rate $=$ yield required by market $\rightarrow$ price ..... par value ($>$, $<$, $\leq$, $\geq$ or $=$), the bon d is sold at .....
   - Coupon rate $>$ yield required by market $\rightarrow$ price ..... par value ($>$, $<$, $\leq$, $\geq$ or $=$), the bond is sold at .....

3. When interest rates fall, the prices of outstanding bonds ..... (rise or fall).

4. The market price of longer maturity bonds fluctuates ..... (more or less) compared with shorter maturity bonds as interest rates change.

5. Consider two bonds, A and B. Both bonds presently are selling at their par value of $1,000. Each pays interest of $120 annually. Bond A will mature in 5 years while bond B will mature in 6 years. If the yields to maturity on the two bonds change from 12% to 10%, both bonds will ..... (increase or decrease) in value, but bond B will increase ..... (more or less) than bond A

6. What is yield to maturity (YTM)?

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7. Consider bond XYZ with a modified duration of 6.33. Suppose that the market value of this bond is $3 million. The approximate dollar price change for a 1 percentage change in yield to maturity is .....

   Reason : .....

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8. Ron Logan, CFA, is a bond manager. He purchased $50 million in 6.0% coupon Southwest Manufacturing bonds at par three years ago. Today, the bonds are priced to yield 6.85%. The bonds mature in nine years. The Southwest bonds are trading at a ..... (discount, premium or par value) and the yield to maturity has ..... (increased, decreased, remained the same) since purchase.

9. Calculate the present value of 1000 Baht zero coupon bond with 10 years to maturity, if the required annual interest rate is 5%

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10. Repeat the calculation in question 9 for the interest rate of 8%

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11. Consider a 7.5% coupon bond with the par value of 1,000 Baht, selling for 879.09175 Baht. The bond will mature in 15 years. The coupon payment is made annually.

    (a) Calculate the yield to maturity.

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    (b) Later in the same year, the bond interest rate is fallen to 5%. What is the price of the 7.5% coupon bond?

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12. Suppose an investor who has 1,000 Baht is considering buying one of 3 years bonds:

    - Bond A has 1,000 Baht face value, 12% annual coupon, 10% yield to maturity.
    - Bond B has 100 Baht face value, 10% annual coupon, 12% yield to maturity.

    Assume that the investor can buy fractions of a bond. If the investor plans to hold the bond until its maturity, which bond the investor should buy to get more returns? Explain the reason.

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13. Suppose you expect the interest rate to go down in the future. You are considering to buy one of these bonds, hold it for a year and then sell it out. Which bond you will buy in order to get the highest returns? Explain.

    - Bond A, 10 years bond with 1,000 Baht face value, 10% annual coupon, 10% yield to maturity.
    - Bond B, 3 years bond 100 Baht face value, 10% annual coupon, 10% yield to maturity.

14. Consider a 5% coupon bond with the par value of 2,000 Baht, selling for 2,228.46372 Baht. The bond will mature in 4 years. Find the modified duration of the coupon bond and explain its meaning.

15. You are buying your first house for $250,000, and are paying $50,000 as a down payment. You have arranged to finance the remaining $200,000 20-year mortgage with a 7% nominal interest rate and yearly payments. What are the equal yearly payments you must make?