FURTHER MIDTERM PREPARATION QUESTIONS

1. **Happy Bear Company has seen no growth for the last several years and expects the trend to continue. The company last paid a dividend of $4.5. If the market requires a rate of return of 15 per cent, what is the current share price?**

D_0 = $4.50; g = 0; R = 15%

$$P_0 = \frac{D}{R} = \frac{\$4.50}{0.15} = \$30$$

2. **Veritas Company has a share price of $70 and pays a dividend of $5 that is expected to remain unchanged in the future. You require a rate of return of 8%. What is the market required rate of return? Would you buy Veritas company shares ? Why yes/no?**

$$P_0 = \frac{D}{R}$$

$$\$70 = \frac{\$5}{R}$$

So the market price of $70, with a dividend of $5 implies that the market has a required rate of return of

$$R = \frac{\$5}{\$70} = 7.14\%$$

You require a rate of return of 8%, which is higher than 7.14% , so you do not buy Veritas Company shares.

3. **Windy Welly Company declared a dividend of $3.15 yesterday. The company is expected to grow its dividend at a steady rate of 6 per cent for the next several years. If shares such as these require a rate of return of 20 per cent, what should be the market value of this share?**

D_0 = $3.15; g = 6% ;R = 20%

Note we need next years dividend so:

$$P_0 = \frac{D_1}{R-g} = \frac{D_0(1+g)}{R-g}$$

$$= \frac{\$3.15 \times 1.06}{0.20 - 0.06}$$

=$3.339/0.14=$23.85

The market value should be $23.85

4. **What is a liquidity premium?**

Additional interest paid by borrowers who issue illiquid securities to obtain long-term funds; the interest premium compensates lenders who acquire a security that cannot be resold easily or quickly at par value.

5. **What is the yield curve?**

   A graph representing the term structure of interest rates, with term to maturity on the horizontal axis and yield on the vertical axis

6. **A zero coupon bond with a face value of $1000 and maturity date March 1st 2024 is sold for $970 on March 1st 2023. What is its yield?**

The yield in this case can be calculated using $1000/$970 – 1 = 1.0309-1 =3.09%

7. **You observe the following market interest rates: spot one-year is 3% per annum and the spot two-year is 5% per annum. What is the implied forward rate on a one-year bond originating one year from now?**

We can use the expectations theory, so that:

(Notation: ^2 means to the power 2).

(1+0.05)^2 =(1+0.04)(1+f)

Therefore

1.1025=1.04(1+f)

(1+f)=1.1025/1.04

(1+f)=1.060

f=1.06-1=0.06=6%

The implied forward rate on a one-year bond originating one year from now is 6%

8. **You observe the following market interest rates: spot one-year is 2% per annum and the spot two-year is 5% per annum and the spot three-year is 6% per annum. What is the implied forward rate on a one-year bond originating two years from now?**

We can use the expectations theory, so that:

(1+0.06)^3 =(1+0.05)^2 (1+f)

Therefore

1.19106=1.1025(1+f)

(1+f)=1.119106/1.1025

(1+f)=1.0803

f=1.0803-1=0.0803=8.03%

The implied forward rate on a one-year bond originating two year from now is 8.03%

9. **Which of the following statements are true and which are false: a) The amount lender-savers want to lend goes up as interest rates go up b) The amount borrower-lenders want to borrow goes up as interest rates go up c) The equilibrium rate of interest is the rate at which the desired level of lending equals the desired level of borrowing.**

a) TRUE b) FALSE c) TRUE

10. **Which of the following statements are true and which are false:**
    a) **The interest rate on securities also varies with the degree of Liquidity.**
    b) **Bond rates signal to investors the default risk of a bond issuer**
    c) **When recession occurs, investors switch to higher quality securities causing their yields to decrease and the yields of lower quality bonds to increase.**
    d) **During periods of prosperity, investors are less willing to hold securities with more default risk.**

    a) TRUE b) TRUE c) TRUE d) FALSE

11. **The expectations theory is one of the theories of the term structure of interest rates. Give the name of the three other theories of the term structure**

Market segmentation theory, preferred-habitat theory, liquidity premium theory

12. **What is novation?**

The process of setting up a contract with a new party, such as when clearinghouses insert themselves between the buyer and seller of a futures contract

13. **What is a primary market?**

A primary market is where new securities are sold for the first time.

14. What does IPO stand for?

IPO stands for initial public offering.

15.Investment banking: What does it mean to 'underwrite' a new security issue

To underwrite a new security issue means that the investment banker guarantees the amount the company wishes to raise in the issue. Any unsold securities are then purchased by the underwriter at the offer price less an underwriting spread and then on sold in the market.

16. What is the role of the clearinghouse in a futures market?

The clearinghouse acts as the counterparty to all buyers and all sellers. This means that traders need not worry about the creditworthiness of the party they trade with but only about the wisdom of the transaction itself.

17. If demand for money (loanable funds) increases, what happens to the level of interest rates?

An increase in the demand for money will shift the demand for loanable funds up and to the right, increasing interest rates (at least in the short term).

18. The one-year real rate of interest is currently estimated to be 1.5 per cent. The current annual rate of inflation is 2 per cent, and market forecasts predict the annual rate of inflation to be 2.5 per cent. What is the current 1-year nominal rate of interest?

Assuming the Fisher effect, the current 1-year nominal rate should be 4 percent, the sum of the real rate (1.5%) plus the expected inflation rate (2.5%), an approximate way of estimating the answer. The exact way to deal with compounding rates is to multiply (1+.015)(1+.025) - 1 = 1.040375=4.0375%=4.04% rounded.

19. Imagine you borrow $1000 from your roommate, agreeing to pay her back the $1000 plus 5 per cent nominal interest in 1 year. Assume inflation over the life of the contract is expected to be 4.25 per cent. What is the total dollar amount you will

have to pay her back in a year? What dollar amount of the interest payment is the result of the real rate of interest?

You will pay her back $1050 ($1000 x 1.05) in one year. So $1000 original sum and $50 interest.
Using (approx.) Fisher equation we have that the real interest rate is 5% nominal rate minus 4.25% inflation, is 0.75% real interest rate.
Therefore ($1000 x 0.0075=$7.5) $7.5 will be a result of the real interest rate

20. An Australian exporter decides in January 2025 to reduce his risk by hedging receivables in US dollars. Accordingly, he buys five June 2025 Australian-dollar contracts at 0.7510.
Contract details are: currency pair A$/US$.
Contract size A$100000
Current price: 0.7510 (A$/US$)

In early June, the exporter closes out his position by selling five contracts at 0.7750. What is the gain or loss on this trading?

(Note the 'object' bought and sold here is not oil or some commodity but currency, i.e A$100000. Since you cannot buy A$ with A$, you have to buy it in US$).
Current price: 0.7510 (A$/US$) means that 1 A$ is traded for 0.7510 US$.

Purchase each A$100 000 contract at US$75100 (=A$100000*0.7510 US$/A$)
So that is a total of US$75100*5= US$375 500
(Buy buying the contract the exporter 'pays' = US$375 500 to be delivered A$100000*5)

Closes out position at 0.7750. So one contract is then worth (A$100000*0.7750 US$/A$=US$77500)

For five contracts that is sales value: US$77 500 x 5 = US$387 500

Buy selling the contract the exporter 'receives' = US$387 500 when delivering A$100000*5)
So paying US$375000 and receiving US$387500 is a gain of US$12 000.