

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)

DEPARTMENT OF BUSINESS AND TECHNOLOGY MANAGEMENT

Semester Final Examination

Summer Semester, A. Y. 2022-2023

Course No: BTM 4201

Time : 3 hours

Course Title: Financial Management I

Full Marks : 150

Answer all 6 (six) questions. All questions carry equal marks. Marks of each question and corresponding CO and PO are written in the right margin within brackets.

- | | | | |
|-------|--|----|----------------|
| 1. a) | How do you define financial management with the help of a diagram? | 05 | (CO1)
(PO1) |
| b) | Describe the objective of external audits of financial statements, the types of audit reports, and the importance of effective internal controls. | 05 | (CO1)
(PO1) |
| c) | Consider two companies in the same industry that have different depreciation schedules. One company has selected straight-line depreciation even though physical assets in its industry tend to lose most of their productive value early in their economic lives. The analyst would need to adjust the depreciation of that firm so that the net income figures for the firms are comparable. A change in a firm's financial statement depreciation would lead to changes in gross profit, operating profit, and so on, down to net profit and earnings per share. Explain appropriate analyst adjustments to a company's financial statements to facilitate comparison with another company. Your answer should cover differences in: <ol style="list-style-type: none"> i. depreciation methods and estimates, ii. investments in securities, inventory accounting differences, iii. off-balance-sheet financing and iv. good will calculation. | 15 | (CO1)
(PO1) |
| 2. a) | Calculate the present value of \$10,000 to be received five years from today, assuming a discount rate of 9% compounded monthly. | 05 | (CO2)
(PO2) |
| b) | An investor deposits £1,000 into an account that pays continuously compounded interest of 9% (nominal annual rate). Calculate the value of this account at the end of six years. | 05 | (CO2)
(PO2) |
| c) | Your client invests \$2 million in a security that matures in 4 years and pays 7.5 percent annual interest rate compounded annually. Assuming no interim cash flows. Calculate the value of the investment at maturity. | 05 | (CO2)
(PO2) |
| d) | Your client deposits \$5 million in a savings account that pays 5 percent per year compounded quarterly. What will be the value of this deposit after 2.5 years? | 05 | (CO2)
(PO2) |
| e) | Grim Smith plans to invest ¥12 million, three years from now. The rate of return | 05 | (CO2) |

- has been estimated at 8 percent per year. Calculate the future value of this investment 11 years from now? (PO2)
3. a) Suppose today is January 2, 2019, and investors expect the annual risk-free interest rates in 2023 and 2024 to be 4.5% and 2.3% respectively (One-year rate R_{RF}). Currently a four-year Treasury bond that matures on December 31, 2022 has an interest rate equal to 2.5 percent. Assume the bonds have no risks. Calculate the yield to maturity for Treasury bonds that mature at the end of - (05) (CO2) (PO2)
- 2023 (a five-year bond)
 - 2024 (a six-year bond).
- b) The Wall Street Journal reports that the yield on a nine-month Treasury bond is 2.3 percent, the yield on a three-year Treasury bond is 2.9 percent, and the yield on a 10-year Treasury bond is 4.3 percent. Although no liquidity premium is associated with Treasury securities, there is a maturity risk premium (MRP) for Treasuries with maturities equal to one year or greater. What is the MRP? (05) (CO2) (PO2)
- c) Currently, a six-month Treasury bill is yielding 3.2 percent. Company F's three-year bond has a yield equal to 5.0 percent, and its seven-year bond has a yield equal to 5.8 percent. Although none of the bonds has a liquidity premium, any bond with a maturity equal to one year or longer has a maturity risk premium (MRP). Except for their terms to maturity, the characteristics of the bonds are the same. Compute the - (05) (CO2) (PO2)
- annual MRP
 - default risk premium (DRP) associated with the bonds.
- d) Suppose economists expect that the nominal risk free rate of return, R_{RF} , which is also the rate on a one-year Treasury note, will be 3.2 percent long into the future. You are evaluating two corporate bonds that are identical except for their terms to maturity. The bonds have the same default risk, and neither bond has a liquidity premium. Bond T matures in five years and has a yield equal to 5.3 percent, whereas Bond Q matures in eight years and has a yield equal to 5.9 percent. Compute - (05) (CO2) (PO2)
- the annual maturity risk premium (MRP)
 - the bonds' default risk premium (DRP).
- e) Economists expect that the nominal risk-free rate of return, R_{RF} , on one-year Treasury bonds will be 2.4 percent long into the future. General Machinery's (GM) one-year bond has a yield equal to 4.8 percent. The yield on the GM bond includes a liquidity premium equal to 0.3 percent. Suppose the maturity risk premium (MRP) for all bonds with maturities greater than one year is 0.15 percent per year. Based on this information, what should be the yield on GM's five-year bonds? (05) (CO2) (PO2)
4. a) Lightning Electric's outstanding bond has a \$1,000 maturity value and a 4.5 percent coupon rate of interest (paid semiannually). The bond, which was issued five years ago, matures in 10 years. If investors require a return equal to 6 percent to invest in similar bonds, what is the current market value of Lightning's bond? (05) (CO3) (PO2)

- b) Eleven years ago, Elite Elements issued a 15-year bond with a \$1,000 face value and a 5 percent coupon rate of interest (paid semiannually). If investors require a return equal to 7 percent to invest in similar bonds, what is the current market value of Elite's bond? 05 (CO3) (PO2)
- c) Fine Fishing Lures (FFL) has an outstanding bond with a \$1,000 face value and a 9 percent coupon rate of interest (paid semiannually). The bond, which was issued 22 years ago, matures in eight years. If investors require a return equal to 4 percent to invest in similar bonds, what is the market value of FFL's bond? 05 (CO3) (PO2)
- d) Tracer Manufacturers issued a 10-year bond six years ago. The bond's maturity value is \$1,000, and its coupon interest rate is 6 percent. Interest is paid semiannually. The bond matures in four years. If investors require a return equal to 5 percent to invest in similar bonds, what is the current market value of Tracer's bond? 05 (CO3) (PO2)
- e) Buner Corp.'s outstanding bond, which has a coupon rate equal to 8 percent and a \$1,000 face value, matures in six years. If investors require a rate of return equal to 12 percent on similar bonds and interest is paid semiannually, what should be the market price of Buner's bond? 05 (CO3) (PO2)
5. a) Since it has been in business, FreeFin has paid a \$1 per share annual dividend. The company plans to pay a \$1 dividend for the next two years. Beginning in three years, however, FreeFin plans to increase the dividend by 8 percent each year for the remainder of the company's life. If investors require a 17 percent rate of return to purchase FreeFin's common stock, what should be the market value of its stock today? 05 (CO3) (PO2)
- b) Forral Company has never paid a dividend. But, the company plans to start paying dividends in two years—that is, at the end of Year 2. The first dividend is expected to equal \$2 per share. The second dividend and every dividend thereafter are expected to grow at a 5 percent rate. If investors require a 15 percent rate of return to purchase Forral's common stock, what should be the market value of its stock today? 05 (CO3) (PO2)
- c) Xtinct Artifacts has not paid a dividend during the past 10 years. However, at the end of this year, the company plans to pay a \$1.50 dividend and a \$2 dividend the following year (Year 2). Starting in three years, the dividend will begin to grow by 5 percent each year for as long as the firm is in business. If investors require an 11 percent rate of return to purchase Xtinct's common stock, what should be the market value of its stock today? 05 (CO3) (PO2)
- d) Sparkle Jewelers expects to pay dividends (per share) of \$0.60, \$0.90, \$2.40, and \$3.50 during the next four years. Beginning in the fifth year, the dividend is expected to grow at a rate of 4 percent indefinitely. If investors require a 20 percent return to purchase Sparkle's stock, what is the current value of the company's stock? 05 (CO3) (PO2)

- e) Georgetown Motorears' (GM) common stock normally sells for 19 times its earnings; that is, its P/E ratio equals 19. If GM's earnings per share are \$3.70, what should be its stock price under normal circumstances? 05 (CO3) (PO2)
6. a) Of the \$60,000 invested in a two-stock portfolio, 40 percent is invested in Stock S and 60 percent is invested in Stock X. If Stock S has a beta coefficient equal to 1.5 and the beta of the portfolio is 2.1, what is the beta coefficient of Stock X? 05 (CO1) (PO10)
- b) Pete's investment portfolio contains five stocks that have a total value equal to \$40,000. The beta coefficient of this portfolio is 1.2. Pete wants to invest an additional \$10,000 in a stock that has beta equal to 2.2. After he adds this stock, what will be the portfolio's new beta? 05 (CO1) (PO10)
- c) Willis currently has \$120,000 invested in a four-stock portfolio with a beta coefficient equal to 0.8. Willis plans to sell one of the stocks in his portfolio for \$48,000, which will increase the portfolio's beta to 1.0. What is the beta coefficient of the stock Willis plans to sell? 05 (CO1) (PO10)
- d) Sharon's portfolio, which is valued at \$200,000, contains six stocks and has a beta coefficient equal to 1.5. Later today, Sharon is going to sell one of the stocks in her portfolio for \$40,000. After the sale, the portfolio's beta will be 1.3. What is the beta coefficient of the stock that Sharon plans to sell? 05 (CO1) (PO10)
- c) The current risk-free rate of return, r_{RF} , is 3 percent and the market risk premium, RPM, is 6 percent. If the beta coefficient associated with a firm's stock is 1.5, what should be the stock's required rate of return? 05 (CO1) (PO10)