

PRIFYSGOL ABERTAWE: SWANSEA UNIVERSITY

DEGREE EXAMINATIONS: August / 2022

SCHOOL OF MANAGEMENT

MN-2004: Corporate Finance 1

Duration: 2 hours

YOU ARE NOT PERMITTED TO READ THE CONTENTS OF THIS QUESTION PAPER UNTIL INSTRUCTED TO DO SO BY AN INVIGILATOR.

Answer ALL Questions in Section A and ALL questions in Section B

Dictionaries: Candidates may only refer to the English and Welsh language dictionaries available at the examination venue.

Calculators: Candidates may only use the electronic calculators available at the examination venue.

FORMULAE SHEET IS IN APPENDIX, PV/FV TABLE IS PROVIDED SEPARATELY.

COMPLETE ALL ROUGH WORKINGS IN THE ANSWER BOOK AND CROSS THROUGH ANY WORK WHICH IS NOT TO BE ASSESSED.

QUESTION PAPERS CANNOT BE REMOVED FROM THE EXAMINATION ROOM.

Section A – Answer ALL Questions**Multiple choice (Each question carries 3 marks and 30 marks in total)**

There is one and only one correct answer for each question. Please write down the question number and your answer (either A, B, C or D) on the answer book (Workings are not required).

Question 1

Which of the following is not the main factor to be considered when a firm sets up credit period?

- A The probability that the customer will not pay
- B The extent to which the goods are perishable
- C The size of the account
- D Total asset requirement

[3 marks]**Question 2**

Assuming all other factors remain unchanged, what is likely to happen if a firm pays out all earnings as dividend?

- A The firm will stop growing.
- B The firm will keep growing.
- C The size of the firm will drop.
- D The firm will be under financial distress.

[3 marks]**Question 3**

A bond is quoted at £925 in the bond market. Given the accrued interest is £25, what is the dirty price of this bond?

- A £950
- B £900
- C £975
- D £875

[3 marks]

Question 4

Which of the following is a characteristic of an ordinary annuity?

- A Annual payments are not identical.
- B Annuity holders receive annual payments in a full period hence.
- C Annuity holders receive annual payments immediately.
- D Annual payments are paid in perpetuity.

[3 marks]

Question 5

Which of the following is a main technique used in real options?

- A Option to expand
- B Put option
- C Call option
- D American option

[3 marks]

Question 6

Which of the following statement best describes the security market line?

- A It is the graphical depiction of the market portfolio.
- B It is the graphical depiction of the capital market line.
- C It is the graphical depiction of the Capital Asset Pricing Model (CAPM).
- D It is the graphical depiction of the opportunity set of all risky assets.

[3 marks]

Question 7

Which of the following is a primary financial statement?

- A External auditor report
- B Statement of acquisition
- C Statement of financial position.
- D Internal auditing report

[3 marks]

Question 8

Which of the following is a form of income in total return?

- A Cash dividends
- B Closing price of a share
- C Asking price of a share
- D Opening price of a share

[3 marks]

Question 9

Which of the following is not a commonly used type of share repurchase?

- A Open market purchase
- B Terms of sale
- C Targeted repurchase
- D Tender offer

[3 marks]

Question 10

Which of the following theory concludes that changes in capital structure benefit shareholders if and only if the value of the firm increases?

- A Modigliani and Miller proposition I
- B Modigliani and Miller proposition II
- C Portfolio theory
- D The pie theory

[3 marks]

Section B – Answer ALL questions**Calculation and analysis (70 marks in total)**

Please write down the question number, necessary workings and answers on the answer book. (Rounding to two decimal places if necessary)

Question 1 (20 marks in total)

(a) A ten-year annuity offers identical annual payment of £1,000 with the first payment due in one year. Assuming an alternative investment offers a rate of return at 10%, what is the present value of this annuity?

[4 marks]

(b) Stock A is expected to pay no dividend next year and then a dividend of £3 from the end of year 2 forever. If the required return on similar equities is 8%, calculate the fair market price of stock A.

[6 marks]

(c) Mr. Davies has just been offered a job at £50,000 a year (assuming the salary is to be made at the end of the year). He anticipates his salary increasing by 9% per year until his retirement in 40 years. Given an interest rate of 20%, what is the present value of all his salary in his career?

[10 marks]

Question 2 (30 marks in total)

- (a) A two-asset portfolio is consisted of a £200 investment in the market portfolio and a £800 investment in the risky asset B. Asset B has a beta of 2.4 and expected return of 16%. Given the return of the market portfolio is expected to be 7% and assuming the capital asset pricing model (CAPM) holds, calculate the expected return and beta of this two-asset portfolio.

[10 marks]

- (b) Mike plc. has two projects to consider. It cannot take both as they are mutually exclusive. The cash flows for both projects are shown below

Points in time (yearly intervals)	Project A (£)	Project B (£)
0	-420,000	-100,000
1	150,000	75,000
2	150,000	75,000
3	150,000	0
4	150,000	0

Given Mike plc's cost of capital is 12%, use net present value (NPV) approach to advise Mike plc. which project to take and briefly discuss the drawback of internal rate of return (IRR) approach in project appraisal.

[10 marks]

- (c) Joy plc. has shares priced at £20 per share in the market, with 1.5 million shares outstanding. In the meanwhile, Joy plc. also has £10 million debt (corporate bonds) outstanding with AA rating and a yield of 6%. Given the market risk premium and risk-free rate are 5% and 4%, respectively, the equity beta for Joy plc. is 0.85 and corporate tax rate is 40%. Calculate the unlevered beta and weighted average cost of capital (WACC) of Joy plc.

[10 marks]

Question 3 (20 marks in total)

Nadar plc. is a manufacturing company with following information available to investors:

Annual cash demand for next year	£100,000
Transaction cost of selling securities	£10 per trade
Annual opportunity cost for holding cash	2.5% per annum
Operating cycle	99 days
Cash cycle	69 days
Days in inventory	50 days

The operation director of the firm believes Baumol model is the appropriate cash management model. Use above information, calculate:

- i) The optimal cash balance of the firm **[8 marks]**
- ii) Number of transactions to be made next year in order to restore cash balance **[4 marks]**
- iii) Average cash balance of the firm over next year **[4 marks]**
- iv) Days in receivables and days in payables of the firm **[4 marks]**

End of Paper - An appendix of 2 pages follows

Appendix

1. Present value of an ordinary perpetuity

$$PV = A/R$$

2. Present value of a growing perpetuity

$$PV = A/(R-g)$$

3. Present value of an ordinary annuity

$$PV = A \cdot \left[\frac{1 - 1/(1+R)^T}{R} \right]$$

4. Present value of a growing annuity

$$PV = A \cdot \left[\frac{1 - \left(\frac{1+g}{1+R} \right)^T}{R-g} \right]$$

5. Pre-tax weighted average cost of capital

$$\text{Pre-tax weighted average cost of capital} = \frac{E}{E+D} r_E + \frac{D}{E+D} r_D$$

6. Unlevered beta

$$\text{Unlevered beta} = \frac{E}{E+D} \beta_E + \frac{D}{E+D} \beta_D$$

7. Weighted average cost of capital

$$r_{WACC} = \frac{E}{E+D} r_E + \frac{D}{E+D} r_D (1 - \tau_C)$$

8. Variance of a two-assets portfolio

$$\text{Var}(p) = (w_1 \sigma_1)^2 + (w_2 \sigma_2)^2 + 2w_1 w_2 \sigma_1 \sigma_2 \rho_{1,2}$$

9. Expected return of a two-assets portfolio

$$E(R_p) = w_1 E(R_1) + w_2 E(R_2)$$

10. Present value of a share with zero growth dividends

$$PV = D_1/R$$

11. Present value of a share with constant growth dividends

$$PV = D_1/(R-g)$$

12. Present value of a consol

$$PV = C/R$$

Present value of a level coupon bond

$$PV = C \cdot A_R^T + \frac{F}{(1 + R)^T}$$

13. Formulae for Beta

$$\beta_i = \frac{\text{cov}(R_m, R_i)}{(\sigma_{R_m})^2}$$

14. Capital asset pricing model

$$E(R_i) = R_f + \beta_i \cdot (E(R_m) - R_f)$$

15. Baumol Model

$$C = \sqrt{\frac{2(F)(T)}{k}}$$

16. Average cash balance of Baumol Model

$$A = C/2$$

17. Number of transactions to be made (Baumol Model)

$$N = T/C$$

18. Miller-Orr Model

$$Z = \left[\frac{3(F)(\sigma^2)}{4k} \right]^{1/3} + L$$

19. Upper control limit of Miller-Orr Model

$$U = 3Z - 2L$$

20. Average cash balance of Miller-Orr Model

$$A = (4Z - L)/3$$

21. Debt yield and default equation (Cost of debt for low rating bonds)

$$r_D = y - p \cdot L$$

22. Operating cycle = Inventory period + Accounts receivable period

23. Cash cycle = Operating cycle – Accounts payable period