

**FINAL EXAMINATION****DIPLOMA OF ACCOUNTANCY****COURSE : FINANCIAL MATHEMATICS****COURSE CODE : MAT1173****DURATION : 2 HOURS 30 MINUTES****INSTRUCTIONS TO CANDIDATES:**

1. This question paper consists of **THREE (3)** questions.
2. Answer ALL questions in the Answer Booklet provided.
3. Please check to make sure that this examination pack consists of:
 - i. The Question Paper
 - ii. An Answer Booklet
 - iii. APPENDIX 1
4. Do not bring any material into the examination hall. Electronic calculator is allowed.
5. Please write your answer using permanent ink.

MYKAD/ PASSPORT NO. :**ID. NO. :****LECTURER :****SECTION :**

DO NOT OPEN THIS QUESTION PAPER UNTIL YOU ARE TOLD TO DO SO

This question paper consists of 6 printed pages including the front page

QUESTION 1

- a. UrbanDrive Mobility Sdn. Bhd. is considering investing in a new electric scooter rental service in a busy tourist area. The business requires an initial investment of RM95,000. The projected annual net cash inflows are estimated at RM24,000 in the first year, RM27,000 in the second year, RM35,000 in the third year, RM32,000 in the fourth year and RM30,000 in the fifth year. To assess the viability of the investment, the company applies the Net Present Value (NPV) and Internal Rate of Return (IRR) techniques.
- i. Determine the Net Present Value (NPV) using a discount rate of 13%.
(5 marks)
 - ii. Calculate the Net Present Value (NPV) using a rate of 18%.
(5 marks)
 - iii. Estimate the Internal Rate of Return (IRR) and interpret the investment decision.
(3 marks)
- b. Aina contributes RM1,500 at the end of every quarter into a long-term investment account that earns 7% interest compounded quarterly. She continues making the deposits regularly for a period of 8 years.
- i. Calculate the accumulated value in the investment account at the end of 8 years.
(4 marks)
 - ii. What is the total interest earned throughout the investment period?
(3 marks)
 - iii. After 8 years, Aina stops making new deposits but leaves the accumulated amount in the account for another 6 years at the same interest rate. Calculate the total amount in the account at the end of the 14th year.
(3 marks)

- c. LunaTech Studio plans to purchase a professional video editing workstation to enhance its digital media production services. The company makes a RM18,000 deposit and finances the remaining balance through a financing company. The repayment agreement requires monthly instalments of RM1,980 at an annual interest rate of 5% compounded monthly over 4 years.
- i. Determine the amount of loan financed by the financing company. (4 marks)
 - ii. Calculate the total interest paid over the financing period. (2 marks)
 - iii. Determine the total cost of purchasing the video editing workstation. (2 marks)
 - iv. If the company misses the first two monthly instalments, determine the total arrears that must be settled in the 3rd month. (3 marks)
- (Total: 34 marks)

QUESTION 2

- a. Hakim manages a café supply business and purchased several items from a distributor on 20th March 2026 to upgrade his outlet equipment as shown below:

Table 1		
Item	Quantity	Unit price (RM)
Commercial blenders	6	980
Café tables	12	520
Dining chairs	15	210
Beverage display chillers	4	1,450

The distributor provided trade discounts of 12% and 10%, followed by a 3% cash discount on the total price after trade discounts. A transportation fee of RM420 was added to the total invoice amount.

- i. Determine the single discount equivalent for the chain discount.
(3 marks)
 - ii. Calculate Hakim's total payment amount after applying trades and cash discounts including transportation charges.
(6 marks)
- b. NovaTech Solutions purchased several office computers from Digital Hub Sdn. Bhd. on 10th February 2026. The computers had a catalogue price of RM96,300. The supplier granted successive trade discounts of 12% and $k\%$. After applying both trade discounts, the net price of the computers was RM76,269.60. The cash discount terms provided were 4/10, 2/20, n/30.
- i. Determine the value of k .
(4 marks)
 - ii. Describe the meaning of the cash terms 4/10 and 2/20.
(2 marks)
 - iii. Calculate the total payment required if NovaTech Solutions settled the invoice on 19th February 2026.
(3 marks)

- c. EcoGlow Candles Sdn. Bhd. specializes in producing handcrafted scented candles for retail stores. In a recent production batch, the company manufactured 3,500 candles at a total manufacturing cost of RM87,500. The management plans to obtain a 25% net profit based on the selling price, while operating expenses are estimated at 16% of the manufacturing cost.
- i. Calculate the total amount of operating expenses. (2 marks)
 - ii. Find selling price of each candle. (3 marks)
 - iii. Determine total gross profit generated from the entire batch. (2 marks)
 - iv. What is the breakeven price of one candle? (3 marks)
 - v. After selling 2,800 candles, the company decided to offer 20% markdown on the remaining 700 candles to accelerate sales before the festive season ended. Calculate the overall net profit earned from the entire batch of candles. (4 marks)
- (Total: 32 marks)

QUESTION 3

- a. i. A printing company purchased a high-speed digital printer for RM210,000. The printer is depreciated annually at 25% using the reducing balance method. Calculate the book value and accumulated depreciation of the printer at the end of the fourth year. (4 marks)
- ii. On March 2023, BrightTen Café Sdn. Bhd. acquired a commercial coffee machine costing RM56,000. The asset is depreciated using the reducing balance method at a rate of 18% per annum. Prepare a depreciation schedule for the financial years ending 2023, 2024 and 2025 containing amount of annual depreciation, accumulated depreciation and book value. (8 marks)
- b. A bakery company acquired an industrial baking oven at a cost of RM125,000 to support the expansion of its large-scale pastry production operations. The oven is projected to function efficiently for a period of 10 years, with an estimated salvage value of RM15,000 at the end of its useful life. The company utilizes the straight-line depreciation method to record depreciation expenses in its financial statements. Determine the
- i. annual depreciation expense. (2 marks)
- ii. annual depreciation rate. (2 marks)
- iii. accumulated depreciation and the book value at the end of the sixth year. (4 marks)
- c. To increase the effectiveness of its distribution operations, a logistics company invested RM140,000 in an automated warehouse sorting system. The machine is estimated to operate for 5 years and is expected to have a salvage value of RM32,000 at the end of its useful life.
- i. Determine the total depreciable amount of the machine. (2 marks)
- ii. Calculate the sum of the digits. (2 marks)
- iii. Prepare a depreciation schedule for the machine for the 5 years using the sum-of-year digits method. (10 marks)

(Total: 34 marks)

(TOTAL: 100 MARKS)

END OF QUESTION PAPER

APPENDIX 1

1. $DF = \frac{1}{(1+i)^n}$	8. $R = C + M$
2. $IRR = \frac{N_1 r_2 - N_2 r_1}{N_1 - N_2}$	9. $M = NP + OE$
3. $S = P(1+i)^n$; $r = \left(1 + \frac{k}{m}\right)^m - 1$	10. $M_C = \frac{M}{C} \times 100\%$ $M_R = \frac{M}{R} \times 100\%$
4. $S = R \left[\frac{(1+i)^n - 1}{i} \right]$	11. $BEP = C + OE$
5. $A = R \left[\frac{1 - (1+i)^{-n}}{i} \right]$	12. $Max MD = \frac{R - BEP}{R} \times 100$
6. $NP = L(1 - r_1)(1 - r_2)(1 - c)$	13. $BV = C(1 - r)^n$
7. $d = 1 - ((1 - r_1)(1 - r_2))$	14. $S = \frac{n(n+1)}{2}$

