



**UNIVERSITI TEKNOLOGI MARA
FINAL EXAMINATION**

COURSE	:	BUSINESS MATHEMATICS
COURSE CODE	:	MAT112
EXAMINATION	:	DECEMBER 2019
TIME	:	3 HOURS

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of two (2) parts :
PART A (8 Questions)
PART B (3 Questions)
2. Answer ALL questions in the Answer Booklet. Start each answer on a new page.
3. Do not bring any material into the examination room unless permission is given by the invigilator.
4. Please check to make sure that this examination pack consists of :
 - i) the Question Paper
 - ii) a one – page Appendix (List of Formula)
 - iii) an Answer Booklet – provided by the Faculty
5. Answer ALL questions in English.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

This examination paper consists of 5 printed pages

PART A**QUESTION 1**

Sammy invested RM8,000 into Amanah Saham Malaysia that offered a simple interest rate of r % per annum on 13 March 2019. The amount of interest received on 10 August 2019 was RM200. Find the interest rate, r % by using the Banker's Rule.

(5 marks)

QUESTION 2

David needs RM30,000 now to start a business. How much should he borrow from a bank for 3 years at 7% bank discount rate?

(5 marks)

QUESTION 3

RM X was deposited in a bank account which pays 6% compounded quarterly. At the end of eight years, the amount in the account was RM10,628.15. Find the value of X .

(5 marks)

QUESTION 4

Harry borrowed RM50,000 from a financial institution which charges 5% compounded monthly. He paid the loan by making 48 monthly payments. Find his monthly payments.

(5 marks)

QUESTION 5

Sarah bought a car through an instalment plan in which she paid RM10,000 as a down payment. She made 60 monthly payments of RM859 each to settle the unpaid balance. If the bank charged her an interest of RM6,500 on the original balance, find the cash price of the car.

(5 marks)

QUESTION 6

KipMart Company received an invoice dated 15 July 2019. The trade discount offered was 15% and 8% and the cash discount terms were 3/15, 2/20, n/30. On 4 August 2019, the company paid RM7,450. Find the list price of the items.

(5 marks)

QUESTION 7

Andy bought a lawn mower that cost RM5,000. He was given 25% discount on that purchase. He later sold that lawn mower with a markup of 35% on selling price. Find the selling price of the lawn mower.

(5 marks)

QUESTION 8

The cost of a new machine is RM65,000. Calculate the rate of the depreciation using the reducing balance method, if the book value of the machine at the end of 2nd year is RM41,600.

(5 marks)

PART B**QUESTION 1**

- a) Setia Jaya Enterprise received an invoice of RM5,200 dated 23 March 2019 for the purchase of 100 shoes. The trade discount given was 14% and 10% and cash discount terms of 5/10, 3/25, n/40. Find
- i) the single discount equivalent rate to the trade discount given. (3 marks)
 - ii) the amount of trade discount received. (2 marks)
 - iii) the amount to be paid if the payment was made on 14 April 2019. (4 marks)
- b) Cybernet Sdn. Bhd., a computer dealer bought 50 computer tables for RM250 each. Operating expenses incurred was 20% of the cost price. If the net profit was 15% of the selling price, calculate
- i) the total selling price if all computer tables are sold. (6 marks)
 - ii) the maximum markdown percent that could be offered so that no loss is incurred. (5 marks)

QUESTION 2

- a) Cindy received a 120-day promissory note with a simple interest rate of 6% per annum on 12 June 2018. She discounted the note at bank discount rate of 8% on 14 September 2018. The proceeds she received were RM10,224.60. Find the maturity value of the note. (6 marks)
- b) Six years ago, Jason opened an account with a deposit of RM4,000. Today, he deposits another RM1,000 in this account. Calculate the amount of money in that account 10 years after his first deposit if the bank pays 9% compounded semi-annually. (6 marks)

- c) Ahmad wants to sell his car that has been used for 9 years. The car was bought for RM155,000. The scrap value after 15 years is estimated to be RM29,500. Two second hand car dealers A and B offered to buy his car. Dealer A used reducing balance method while Dealer B used the straight line method to calculate the depreciation. Find the book value at the end of 9th year for both dealers. Hence, state which dealer should Ahmad choose.
- (8 marks)

QUESTION 3

- a) The cash price of a refrigerator is RM8,150. It can be purchased by monthly instalments and a down payment of RM200. The payment is to be paid in 2 years and the interest charged is 3.5% on reducing balance. Calculate
- i) the amount of interest charged.

(4 marks)
 - ii) the monthly payment.

(3 marks)
 - iii) the outstanding balance if a buyer wishes to settle the debt immediately after the 18th payment by using the Rule of 78.

(5 marks)
- b) Anthony plans to take up business and purchase a shop lot near his home. He saves RM10,000 in an account that pays 6% compounded every four months. Four years later, he withdrew all his money to pay for the down payment of the shop lot.
- i) Find the value of the down payment.

(3 marks)
 - ii) The balance of the shop lot's price was financed through another bank that charges an interest rate of 4.25% compounded monthly. The loan was to be paid by making RM1,502 every month for the next 15 years. Find the cash price of the shop lot.

(5 marks)

END OF QUESTION PAPER

LIST OF FORMULA

1. $S = P(1+rt)$	2. Proceeds = $S(1-dt)$
3. $r = \frac{d}{1-dt}$	4. $d = \frac{r}{1+rt}$
5. $S = P(1+i)^n$	6. $S = R \left(\frac{(1+i)^n - 1}{i} \right)$
7. $A = R \left(\frac{1 - (1+i)^{-n}}{i} \right)$	8. $SP = C + M$
9. $GP = OE + NP$	10. $NP = LP(1-d_1)(1-d_2)\dots(1-d_n)$
11. $r = \frac{2mI}{B(n+1)}$	12. $r = 1 - \sqrt[n]{\frac{S}{C}}$
13. $BV_n = C(1-r)^n$	14. $OPB = (R \times k) - I \left[\frac{k(k+1)}{n(n+1)} \right]$