UNIVERSITI TEKNOLOGI MARA
FINAL EXAMINATION

COURSE	:	BUSINESS MATHEMATICS
COURSE CODE	:	MAT112
EXAMINATION	:	JUNE 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. Students are allowed to bring calculator.

4. Do not bring any material into the examination room unless permission is given by the invigilator.

5. Please check to make sure that this examination pack consists of :

    i)   the Question Paper
    ii) a one – page Appendix
    iii) an Answer Booklet – provided by the Faculty

6. 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

On 20 February 2016, Encik Basri took a personal loan of RM6,000 from a bank that charged a simple interest rate of 8%. Find the amount paid on 15 June 2016 using Banker's Rule.

(5 marks)

QUESTION 2

Syamsina needs RM3,500 now. Find the amount that she should borrow for 200 days from a bank that charges 8.5% bank discount rate.

(5 marks)

QUESTION 3

Jarjit invested RM40,000 in a fund that pay interest at 5.5% compounded quarterly t years ago. Find t if the amount of the investment today is RM64,555.53.

(5 marks)

QUESTION 4

Fizi takes a loan that charged interest at 6.6% compounded monthly. He repays the loan in 8 years with monthly payment of RM677. Immediately after paying the 66th payment, he decides to settle the balance of the loan. Find the balance to be paid.

(5 marks)

QUESTION 5

The cash price of a Toyota Vellfire is RM350,000. Farid purchased the car and paid 10% down payment. The balance has to be repaid by making monthly installments for 9 years. If the interest rate charge is 4.5% per annum on original balance, calculate the total interest charged.

(5 marks)

QUESTION 6

Tunggak Jaya Enterprise bought wood stoves from a wholesaler at listed price of RM850 per unit with trade discounts of 25% and x%. If the amount of trade discount obtained was RM244.35, find the value of x.

(5 marks)

QUESTION 7

A bridal shop sold 10 bridesmaid dresses for RM X. The cost for a dress is RM300. The markup was 45% based on selling price. Find the value of X.

(5 marks)

QUESTION 8

Radin bought a car that cost RM120,000. The useful life of the car is eight years. If the salvage value of the car is RM50,000, find the book value of the car after four years using the declining balance method.

(5 marks)

PART B

QUESTION 1

a) Ayra Butik Collection received an invoice dated 12 November 2018 for purchased of 150 baju kurung at RM75 each. The retailer was offered trade discount of 12% and 8% with cash discount terms of 8/10, 5/15 and n/30. Find

   i) the single discount rate equivalent to the trade discounts given.

   (3 marks)

   ii) the last day to receive 5% cash discount.

   (2 marks)

   iii) the amount to be paid if the payment was made on 25 November 2018.

   (4 marks)

b) Excellent Stationary Sdn. Bhd. would like to sell a box of gel pens at the price of RM150. There are 20 gel pens in a box. The operating expenses are RM2.30 for a gel pen. If the company wants to have 30% net profit based on cost,

   i) find the cost for a gel pen.

   (6 marks)

   ii) determine whether there is any profit or loss incurred if the company wants to sell a box of gel pens at RM120.

   (5 marks)

QUESTION 2

a) Amin received a promissory note at 6.85% simple interest rate on 3 June 2018. The note will mature on 11 September 2018. After holding the note for 55 days, he discounted the note at discount rate of 7% and received proceeds of RM7,500. Find the maturity value of the note.

   (6 marks)

b) Alana deposited RMX into a saving account for 7 years. The interest rate is 3.75% compounded every two months for the first 2.5 years and 4.15% compounded quarterly for the rest of the period. If the accumulated amount in the saving account at the end of 7 years is RM5,949.60 , find the value of X.

   (8 marks)

c) Sunny Company buys a bus at RM150,000. The useful life of the bus is ten years. If the book value at the end of five years is RM90,000, find the scrap value of the bus at the end of ten years using the straight line method.

(6 marks)

QUESTION 3

a) Dahlia purchased 3 bedroom sets that costs RM30,000 through an installment plan. She paid RM1,500 as a down payment and the balance is to be paid with 24 monthly installments. If the interest rate is 6% flat rate, find

i)   the amount of interest charged

(4 marks)

ii) the monthly payment

(3 marks)

iii) the outstanding balance if Dahlia decides to settle the loan immediately after the 15th payment by using the Rule of 78.

(5 marks)

b) A house costing RM320,000 cash is purchased by making a 20% down payment. The balance is to be settled by making 240 monthly payments. The interest charged is 4.55% compounded monthly.

i)   Calculate the monthly payment.

(4 marks)

ii) If the buyer fails to pay for the first tenth monthly payment, how much should the buyer pay on the eleventh payment to settle all the outstanding arrears?

(4 marks)

END OF QUESTION PAPER

LIST OF FORMULAE

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