UNIVERSITI TEKNOLOGI MARA
TEST (SET 1)

COURSE	**:**	**BUSINESS MATHEMATICS**
COURSE CODE	**:**	**MAT112**
DATE	**:**	**DECEMBER 2022**
TIME	**:**	**1 HOUR 30 MINUTES**

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of **THREE (3)** questions.
2. Answer **ALL** questions in English.
3. Calculator can be used.
4. Do not bring any material into the examination room unless permission is given by the invigilator.
5. Please write your answer on paper using a pen.
6. Make sure your answer papers are **readable**. Write your answers **clearly** with your full name, group and student ID.

NAME : _____

STUDENT NO. : _____

GROUP : _____

LECTURER : _____

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

This examination paper consists of 4 printed pages

QUESTION 1

a) Khidhir deposited RM1,640 into a saving account that pays r% simple interest rate per annum. The amount of interest earned at the end of 6 years was RM580.56. Calculate

i) the interest rate, r.

(3 marks)

ii) the accumulated amount at the end of the term.

(2 marks)

b) On 14 February 2020, Nadia borrowed RM X from CBCH Bank that charged a 7.24% simple interest rate. She settled the loan by paying RM14,873.45 on 3 August 2020. Using exact time and ordinary simple interest, find

i) the duration of the loan (in days).

(3 marks)

ii) the value of X.

(4 marks)

iii) the interest paid.

(3 marks)

QUESTION 2

a) RM10,000 was borrowed for 150 days at a discount rate of 4.75%. Calculate the proceeds and the discount charged.

(5 marks)

b) Neymar received a 110-day promissory note for RM9,000 which matures on 25th September 2021 with a simple interest rate of 4.4% per annum. He then discounted the note 30 days before the maturity date and received the proceeds of RM9,045. Find

i) the date of the note.

(3 marks)

ii) the maturity value.

(3 marks)

iii) the bank discount rate.

(4 marks)

QUESTION 3

a) Shinta borrowed RM8,300 from a bank that charged 3.8% compounded semi-annually for t years. If she has to pay RM11,007.55 at the end of the term, find the value of t.

(7 marks)

b) 6 years ago, Amira deposited RM Y in a saving account that offers 5.6% interest compounded quarterly. Today, she wants to withdraw RM520 from the same account. Calculate the value of Y if the accumulated amount in the account 13 years after her first deposit is RM6,444.29.

(8 marks)

END OF QUESTION PAPER

APPENDIX 1

LIST OF FORMULAE

1. $S = P(1+rt)$	2. $\text{Proceeds} = S(1-dt)$
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. $OPB = Rk - I\left[\dfrac{k(k+1)}{n(n+1)}\right]$

