BERJAYA BUSINESS SCHOOL

FINAL EXAMINATION

Student ID (in Figures)   :

Student ID (in Words)   :

Course Code & Name : **MAT1013 BUSINESS MATHEMATICS**
Trimester & Year   : May - August 2018
Lecturer/Examiner   : Ms. Faridah Hanum Amran
Duration   : 2 Hours

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INSTRUCTIONS TO CANDIDATES

1. **This question paper consists of 2 parts:**
    PART A (30 marks)   :   **THIRTY (30) Multiple-choice questions. Answers are to be written in the Answer Booklet provided.**
    PART B (70 marks)   :   **FOUR (4) problem solving questions. Answers are to be written in the Answer Booklet provided.**
2. **Candidates are not allowed to bring any unauthorized materials except writing equipment into the Examination Hall. Electronic dictionaries are strictly prohibited.**
3. **This question paper must be submitted along with all used and/or unused rough papers and/or graph paper (if any). Candidates are NOT allowed to take any examination materials out of the examination hall.**
4. **Only ballpoint pens are allowed to be used in answering the questions, with the exception of multiple-choice questions, where 2B pencils are to be used.**

Total Number of pages = 9 (Including the cover page)

PART B : PROBLEM SOLVING QUESTIONS (70 MARKS)
INSTRUCTION(S) : FOUR (4) problem solving questions. Answer ALL questions in the Answer Booklet(s) provided.

Question 1

a) Explain the differences between simple interest and compound interest. (4 Marks)

b) S = P (1 + rt), define what is S, P, r and t. (4 Marks)

c) If you invest $4,800 at 6% compounded quarterly for six years, find:
   i.   the amount at the end of six years. (6 Marks)
   ii. the interest earned. (2 Marks)

d) How many times the interest is being compounded if the rate is:
   i.   28% compounded every semi-annually. (2 Marks)
   ii. 1.3% compounded every two month. (2 Marks)

[Total: 20 marks]

Question 2

a) Find the future value of an investment worth $30,000 at 1% compounded annually for 3 years.

(4 Marks)

b) Felicia yap borrowed $250, 000 at 2% compounded monthly. She has to repay the loan by making 50 monthly payments. Calculate her monthly payments.

(8 Marks)

c) Find the future value and the interest earned for each of the following annuities:

   i. $100 every month for 2 years at 10% compounded monthly. (4 Marks)
   ii. $500 every two month for 1 years at 15% compounded every two month.

(4 Marks)

[Total: 20 marks]

Question 3

a. Draw the following inequalities:
    i. $x \geq -4$ (2 Marks)
    ii. $y < 6$ (2 Marks)
    iii. $y \geq -2$ (2 Marks)
    iv. $0 \leq x \leq 6$ (2 Marks)
    v. $-2 \leq y \leq 4$ (2 Marks)

b. Solve the following linear inequality system graphically.
    $x \geq -2$
    $x \leq 4$
    $y \geq 1$
    $y \leq 8$

                                                                        (10 Marks)

                                                                        [Total: 20 marks]

Question 4

Differentiate the following with respect to x.

a. $x (1 - x - x^2)$ (2.5 Marks)

b. $x + 2x^2 + 3x^3$ (2.5 Marks)

c. $(3x + 4)^5$ (2.5 Marks)

d. $(3 - x)^2$ (2.5 Marks)

                                                                        [Total: 10 marks]

END OF QUESTION PAPER