

BERJAYA BUSINESS SCHOOL

FINAL EXAMINATION

Student ID (in Figures) :

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Student ID (in Words) : _____

Course Code & Name : **MAT1013 BUSINESS MATHEMATICS**
 Trimester & Year : January – April 2019
 Lecturer/Examiner : Ms. Faridah Hanum Amran
 Duration : 2 Hours

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.

WARNING: The University Examination Board (UEB) of BERJAYA University College regards cheating as a most serious offence and will not hesitate to mete out the appropriate punitive actions according to the severity of the offence committed, and in accordance with the clauses stipulated in the Students' Handbook, up to and including expulsion from BERJAYA University College.

Total Number of pages = 10 (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) Describe the concepts of time value of money and inflation. (4 Marks)
- b) Explain the differences between simple interest and compound interest. (4 Marks)
- c) $S = P(1 + i)^n$, define what is S, P, i and n. (4 Marks)
- d) Calculate at what rate compounded semi-annually will RM2,000 become RM3,500 in five years? (6 Marks)
- e) How many times the interest is being compounded if the rate is 17% compounded every two months? (2 Marks)

[Total: 20 marks]

Question 2

To determine the minimum amount for x and y by constructing a graph.

Objective function $C = x + 4y$.

Subject to the constraints:

$$\begin{aligned} 2x + 6y &\geq 6 \\ 6x + 9y &\geq 15 \\ 4x + 2y &\geq 6 \\ x, y &\geq 0 \end{aligned}$$

[Total: 20 marks]

Question 3

a. Draw the following inequalities:

- i. $y \leq 2x - 1$ (3 Marks)
- ii. $x + y \geq 3$ (3 Marks)
- iii. $x - 3y \leq 10$ (3 Marks)
- iv. $y \leq \frac{2}{3}x - 4$ (3 Marks)

b. Solve the following linear inequality system graphically: (8 Marks)

$$3x + y \leq 18$$

$$x + y \leq 16$$

$$x, y \geq 0$$

[Total: 20 marks]

Question 4

Differentiate the following with respect to x.

- a. $(x - 1)^2 (3 + 2x)^3$ (2.5 Marks)
- b. $x^3 (x^2 + 3)^2$ (2.5 Marks)
- c. $(3x + 4)^5$ (2.5 Marks)
- d. $8(2 - x + x^3)^4$ (2.5 Marks)

[Total: 10 marks]

END OF QUESTION PAPER