Private & Confidential

FACULTY OF BUSINESS

FINAL EXAMINATION

Student ID (in Figures)	:	
Student ID (in Words)	:	
Course Code & Name	:	**MAT 1013 BUSINESS MATHEMATICS**
Semester & Year	:	January – April 2020
Lecturer/Examiner	:	Rosnah Mohamad Noor
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 Multiple Choice Answer Sheet 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 = 9 (Including the cover page)

PART B **: PROBLEM SOLVING QUESTIONS (70 MARKS)**
INSTRUCTION(S) **:** Answer all **FOUR (4)** questions. Write your answers in the Answer Booklet(s) provided.

Question 1

Determine the future value of RM 20,000 which was invested for :

a) 4 years at 4% compounded annually (3 marks)

b) 5 years 6 months at 14%compounded semi –annually (3 marks)

c) 2 years 3 months at 4% compounded quarterly (3 marks)

d) 5 years 7 months at 5% compounded monthly (3 marks)

e) 2 years 8 months at 9% compounded every 2 months (3 marks)

(Total : 15 marks)

Question 2

Using matrices, calculate the value of the unknowns in each of the following simultaneous equations.

a) $x+y = 8$
$y-x = 4$ (5 marks)

b) $3p-q=0$
$9p-4q+9=0$ (5 marks)

c) $3b=2a+3$
$5a-7b=2$ (5 marks)

d) $7=2m-8n$
$6=5m-2n$ (5 marks)

(Total : 20 marks)

Question 3

a) Draw the following inequalities:

i. $y \leq 5x - 1$ (3 marks)

ii. $x + y \geq 34$ (3 marks)

iii. $x - 4y \leq 10$ (3 marks)

iv. $y < 5x - 4$ (3 marks)

b) Sketch the graph, shade the region which satisfies the three inequalities below:

$y > 2x$
$y \leq -x + 8$
$x > 1$ (8 marks)

(Total : 20 marks)

Question 4

Differentiate the following with respect to x.

a) $f(x) = x^6 - 3x^3 + 5$ (5 marks)

b) $f(x) = 1/2x^4 + 3x^2 + 7$ (5 marks)

c) $f(x) = (x-1)(2x+3)$ (5 marks)

(Total : 15 marks)

END OF EXAM PAPER