

BERJAYA BUSINESS SCHOOL**FINAL EXAMINATION**

Student ID (in Figures) :

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Student ID (in Words) : _____

Course Code & Name : **MAT1513 MATHEMATICS FOR BUSINESS**
Trimester & Year : January - April 2018
Lecturer/Examiner : Ms. Faridah Hanum Amran
Duration : 3 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 = 3 (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. Eighteen months ago, Amy deposited RM3,000 in a savings account earning 5% interest compounded semi-annually. At the same time, she deposited RM150 at the end of every month in another account earning 3% interest compounded monthly. Today, she intends to withdraw all her money from both accounts to pay part of the 10% down payment for a new car. The cash price of the car is RM80,000.

- i. Calculate the total withdrawal from both accounts.

(10 Marks)

- ii. Amy plans to take up a loan from a finance company to finance the 90% balance of the car price. The finance company charges interest at 4.5% compounded monthly and the loan is payable in eight years. Calculate how much will the monthly payments be?

(10 Marks)

[Total: 20 marks]

Question 2

Solve the following system of equations by Cramer's rule:

$$3x - 8y - 7z = 58$$

$$-8x - 8y - 8z = -80$$

$$-7x - 9y + 9z = 42$$

[Total: 20 marks]

Question 3

The marginal revenue, $R'(x)$ of a certain product is given as $R'(x) = 40 - 0.02x$ where x is the level of output. Find the:

i. total revenue function

(5 marks)

ii. demand function

(5 marks)

[Total: 10 marks]

Question 4

a. Calculate the equilibrium price and quantity for demand and supply functions below:

i. Demand function $(Q) = 81 - 0.05P$

Supply function $(Q) = -24 + 0.025P$

(5 marks)

ii. Demand function $(P) = 200 - 5Q$

Supply function $(P) = 92 + 4Q$

(5 marks)

b. i. Determine the equation of the line which has a slope $m = 1.5$, and which passes through the point $x=4, y=12$

(5 marks)

ii. A supplier is known to supply a quantity of goods $Q=30$ when the market price P is RM25 per unit. If the quantity supplied increases by 3 for each unit increase in price, determine the equation of the supply function in the form $Q = f(P)$.

(5 marks)

[Total: 20 marks]

END OF QUESTION PAPER