



**BERJAYA BUSINESS SCHOOL**

**FINAL EXAMINATION**

Student ID (in Figures) : 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Student ID (in Words) : \_\_\_\_\_  
\_\_\_\_\_

Course Code & Name : **MAT1013 BUSINESS MATHEMATICS**  
Trimester & Year : January – April 2018  
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) : THREE (3) 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) : THREE (3) problem solving questions. Answer ALL questions in the Answer Booklet(s) provided.**

---

**Question 1**

- a) Hani bought a house by making a down payment of RM45,000. The balance was borrowed from bank which charged interest of 7.0% compounded monthly for twenty-five years with monthly payments of RM1,413.56.
- i. Find the amount borrowed. (4 Marks)
  - ii. Calculate the interest paid for the loan. (3 Marks)
  - iii. Find the cash price of the house. (1 Marks)
- b) Find the future values for the following investments:
- i. RM20,000 at 5% compounded annually for 5 years. (4 Marks)
  - ii. RM30,000 at 6% compounded semi-annually for 5 years 6 months. (4 Marks)
  - iii. RM40,000 at 12% compounded every 4 months for 6 years. (4 Marks)
- c) Briefly explain the concepts of time value of money and inflation. (4 Marks)
- d) Explain the differences between simple interest and compound interest. (4 Marks)
- e) How many times the interest is being compounded if the rate is 35% compounded every six months? (2 Marks)

**[Total: 30 marks]**

## Question 2

Amelia wants to invest up to RM200,000 in two stocks, Crystal and Ruby. She decides that her investment in Crystal should be at most RM160,000 and that the investment in Ruby should be at least RM20,000. Suppose that for each ringgit invested, Crystal is expected to return RM0.30 while Ruby is expected to return RM0.40. She also plans that her investment in Ruby can be at most  $\frac{1}{3}$  of the investment in Crystal. Calculate how much she should invest in Crystal and Ruby to maximize the return of her investment?

**[30 Marks]**

## Question 3

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.  $(6x + 8)^{10}$  (2.5 Marks)

d.  $3(1 - x + x^2)^2$  (2.5 Marks)

**[Total: 10 marks]**

**END OF QUESTION PAPER**