## BERJAYA BUSINESS SCHOOL

## FINAL EXAMINATION

Student ID (in Figures)

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Student ID (in Words) :

Subject Code \& Name : BBM 1303 MATHEMATICS FOR BUSINESS
Semester \& Year : May-August 2016
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 2 B pencils are to be used.

WARNING: The University Examination Board (UEB) of BERJAYA University College of Hospitality 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 of Hospitality.


## 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. RM 14500 was saved every six month for three years in an account that pays $10 \%$ compounded semi-annually. Find the accumulated value if the interest rate was changed to $12 \%$ compounded semi-annually after two year.
(10 Marks)
b. Find the present value of an annuity of RM 3450 every month for 2 years if the first payment is made after 1 year. Assume money is worth $6 \%$ compounded monthly.
(5 Marks)
c. Zukri won an annuity that pays RM 7500 every three month for four years. Calculate the present value of this annuity if money is worth $15 \%$ compounded quarterly.
(5 Marks)
[Total: 20 marks]

## Question 2

a. Find $f^{\prime}(x)$ if:
I. $f(x): 20+2 x^{2}+3 x^{4}$
(3 Marks)
II. $f(x): x^{10}+{ }^{4} \sqrt{ } x$
III. $f(x):(9 x+31)(x-9)$
b. Find the equation of the tangent line to the curve $f(x)=2 x^{2}+14 x+4$ at the point $x=5$.

## Question 3

a. Solve $x^{2}-9 x+8=9 x+12$ by using quadratic formula.
b. The demand function for a good is given as $Q=65-5$. Fixed costs are $R M 30$ and each unit produced costs an additional RM 2.
i. Write down the equation for total revenue and total costs in terms of Q . (3 marks)
ii. Find the break-even points algebraically.
[Total: 10 marks]

## Question 4

a. Calculate the equilibrium price and quantity for demand and supply functions below:
i. Demand function $(\mathrm{Q})=81-0.05 \mathrm{P}$

Supply function $(Q)=-24+0.025 \mathrm{P}$
ii. Demand function $(P)=$ 200-5Q

Supply function $(P)=92+4 Q$
b. i. Determine the equation of the line which has a slope $m=1.5$, and which passes through the point $x=4, y=12$
ii. A supplier is known to supply a quantity of goods $Q=30$ when the market price $P$ is 25 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: $\mathbf{2 0}$ marks]

