POLiTEKniK
Jabatan Pengajian Politeknik

EXAMINATION AND EVALUATION DIVISION
DEPARTMENT OF POLYTECHNIC EDUCATION
(MINISTRY OF HIGHER EDUCATION)

COMMERCE DEPARTMENT

FINAL EXAMINATION

JUNE 2012 SESSION

PB203 : BUSINESS MATHEMATICS

DATE : 22 NOVEMBER 2012 (THURSDAY)
DURATION : 2 HOURS (8.30 AM - 10.30 AM)

This paper consists of **SIX (6)** pages including the front page.
Section A : Structured (4 questions – answer all)

CONFIDENTIAL
DO NOT OPEN THIS QUESTION PAPER UNTIL INSTRUCTED BY
THE CHIEF INVIGILATOR

(The CLO stated is for reference only)

QUESTION 2

The following information was provided by Zara Sdn Bhd for the production of a product for the year ended 30.12.2011.

Sales volume (kg) = 50,000

Price per kg = RM6.70

Variable Cost per kg = RM2.45

Annual Fixed Cost = RM80,000

Calculate: [CLO 1: C3]

(a)   The profit made in that year.   (7 marks)

(b)   The profit when the selling prices increase by 15%.   (6 marks)

(c)   The Breakeven Point in units and RM.   (7 marks)

(d)   The quantity needs to be sold to get a profit of RM60, 000.   (5 marks)

SECTION A

STRUCTURED (100 marks)

INSTRUCTION :

This section consists of **FOUR (4)** structured questions. Answer **ALL** questions.

QUESTION 1

(a)   Calculate the value of x.   [CLO 1: C3]

     i. $5x + 12 = 11x$ (3 marks)

     ii. $\frac{x}{2} + \frac{3-x}{4} = 12$ (3 marks)

(b)   Solve the quadratic equation below.

     i. $2x^2 - 5x + 2 = 0$ (3 marks)

     ii. $(4x - 6)(2x + 4) = -6$ (6 marks)

(c)   Solve this system of equation.

$$x + y + z = 6$$
$$x - y + z = 2$$
$$x + 2y - z = 2$$

     (10 marks)

QUESTION 4

Paddy (*Padi*) is harvested in Kedah and stored in warehouses in three different cities - Alor Setar, Jitra and Kulim. These warehouses supply three mills, located in Mills 1, Mills 2 and Mills 3. Paddy is shipped to the mills in railroad cars, each of which is capable of holding one ton of paddy. Each warehouse is able to supply the following number of tons (i.e., railroad cars) of paddy to the mills on a monthly basis:

Warehouse	Supply
Alor Setar	150
Jitra	175
Kulim	275

Total	600 tons

Each mill demands the following number of tons of paddy per month.

Mills	Demand
Mill 1	200
Mill 2	100
Mill 3	300

Total	600 tons

QUESTION 3

(a)   Dr Rozaili plan to have his own building. The building will cost him RM 3,000,000. For that purpose, he has approached the bank XYZ. The bank requires him to pay for the down payment of 10 % and monthly payment of RM 15,000 for 25 years. Other payments involve are lawyer fee and insurance for RM 20,000 and RM 50,000 respectively. You are required to calculate :

   i.   Interest amount   [CLO 1 : C3]

                                                            (5 marks)

   ii.   Interest rate   [CLO 1 : C3]

                                                            (11 marks)

   iii. The rebate if Dr Rozaili wants to settle all his debts after 20 years.

                                                            [CLO 1 : C3]

                                                            (4 marks)

(b)   Azmi has won an annuity that pays him RM5, 000 every 4 months for 2 years. Prepare the amount of annuity if the interest rate is 9% compounded every 4 months?

                                                            [CLO 1 : C3]

                                                            (5 marks)

The cost of transporting one ton of paddy from each warehouse (source) to each mill (destination) differs according to the distance and rail system. These costs are shown in the following table.

Paddy warehouse	Mills (RM)		
	Mill 1	Mill 2	Mill 3
Alor Setar	6	8	10
Jitra	7	11	11
Kulim	4	5	12

You are required to: [CLO 1 : C3]

(a)   Prepare a transportation table base on the given data   (5 marks)

(b)   Calculate the initial solution by using:
   i.   The north west corner method   (10 marks)
   ii.   The minimum cost method   (10 marks)