7073 BUSINESS MATHEMATICS 2

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

JUNE 2017   **ADVANCED LEVEL**

Subject Title	Business Mathematics
Paper No	2
Subject Code No.	7073

Three Hours

INSTRUCTIONS TO CANDIDATES

Answer QUESTION ONE and SIX others. The mark allocation per question is indicated. All necessary working must be shown.

You are allowed to use simple scientific calculators, statistical formulae and financial tables where appropriate.

You will be provided with graph paper where necessary.

Turn

1. A farm project has the following net cash flows occurring at the end of each year:

Year	0	1	2	3	4	5	6
Cash flow (M frs)	(110)	(25)	85	60	75	74	69

Required:

(a) Determine and interpret the payback period of the project   **(6 marks)**

(b) Determine the net present value (NPV) of the project given a discount rate of 16.5% p.a.   **(7 marks)**

(c) Based on the results in (a) and (b), will you advise management to invest in the farm project and why?   **(1 mark)**

(d) Which of the investment appraisal techniques above will you prefer to use to appraise other investment projects and why?   **(2 marks)**

     (Total 16marks)

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2 (a) Mr. Bamenda and Co.Ltd bought a computer for 500,000 frs. What rate must be used to depreciate it using the reducing balance method, such that the scrap value at the end of 12 years will be one fifth of the original value?(2DP)   **(4 marks)**

(b) Use the calculated rate (a) above, show in a table the depreciation schedule for the first 7 years   **(8 marks)**

(c) During which year does the value of the machine reach 50%of the original value?   **(2 marks)**

     (Total 14 marks)

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3. Mr. Joker a cocoa farmer in Mutengene borrowed an amount of money from Tiket microfinance establishment to buy chemical for his farm. This loan is repayable in four equal annual payments .The sum of the first two amortisation is 46,855.47 frs and the sum of the last two amortisation is 53,144.53 frs. As an accountant in Tiket institution calculate :

(a) The interest rate of the loan.   **(4 marks)**

(b) The amount of the first amortisation.   **(3 marks)**

(c) The constant annuity.   **(2 marks)**

(d) The amount of the initial loan.   **(2 marks)**

(e) Present the first and the last lines of the amortisation schedule.   **(3 marks)**

     (Total 14 marks)

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4. RAZEL Plc bought a machine for 500,000,000 frs through hire purchase and paid 25% as down payment and the balance to be paid over at an interest rate of 18% p.a compound interest. Interest is paid per quarter.

(a) Determine how much interest Razel will pay.   **(8 marks)**

(b) Calculate the total amount RAZEL will pay for the machine.   **(3 marks)**

(c) Calculate the effective annual interest rate that corresponds to the following:

    (i)   3% every 6 months.   **(1 mark)**

    (ii)   2% every quarter.   **(1 mark)**

    (iii)   1% per month.   **(1 mark)**

     (Total 14 marks)

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5. A father left 24,000,000frs to be shared to his children, Anaka, Bongka and Cho who are 14¼ years old, 11¼ years old and 6 years old respectively the day he died .

(a) Knowing that each child will only get his share when he is 21years old and that the capital inherited is equally shared the day the father dies; Calculate the shares that each child will receive at 21.(note that each share is invested at the compound interest rate of 4% from the date of sharing to the date the child is 21 years).   **(7 marks)**

(b) Assuming that the sharing is done such that each child receives the same amount when he is 21 years old (after invested at the rate of 4%); you are asked to share this capital among the three children.   **(7 marks)**

     (Total 14 marks)

6. Mr.Lobe wants to acquire a second handed van costing 4,500,000 frs for the distribution of his products. He met a dealer who propose to him the two modes of payment:
   - Cash payment with cash discount of 5%.
   - Payment of 25% cash down and the balance in three bills of the same of nominal value coming due respectively in 2 months,3 months and 4 months after the purchase.
   (a) Calculate the price to pay with the first mode of payment. **(2 marks)**
   (b) Calculate the nominal value of each bill knowing that the rate of discount is 15% (round the answer to the nearest hundredth). **(9 marks)**
   (c) Which is the most advantageous mode of payment? Justify your answer. **(3 marks)**

   (Total 14 marks)

7. The cost accountant has derived the following information about basic weekly wage rates and the number of employees in each of the three categories .The information is presented below

Category	2008		2009		2010	
	Wage Rate	No. of employee	Wage Rate	No. of employee	Wage Rate	No. of employee
A	2.8	160	3.3	200	2.5	350
B	2.8	250	2.9	270	2.0	200
C	2.0	490	2.4	370	3.0	250

   (a) Calculate and interpret the Laspeyres wage index for 2009 using 2008 as the base year. **(6 marks)**
   (b) Calculate and interpret the Paache's wage index for 2010 using 2008 as the base year. **(5 marks)**
   (c) Compare the results in (a) and (b). **(1.5 marks)**
   (d) State two uses of index numbers to a business establishment. **(1.5marks)**

   (Total 14 marks)

8. The capital of Mt. Cameroon Co.Ltd is made up of ordinary shares and a 5% debenture loan only .The debenture constitutes 20% of the total capital of the company.
   Of the total profit for the year 45% is allowed for working expenses, debenture loan interest is paid and 10% is sent to the reserve fund. The rest 2,400,000 is paid to ordinary shares which represent a dividend of 4%.
   Calculate:
   (a) The capital of Mt. Cameroon Co .Ltd. **(4 marks)**
   (b) The total profit for the year. **(10 marks)**

   (Total 14 marks)

   (a) Mr Broker sells $6,000, 6 % stock open at 84 and reinvests the proceeds in 5 % stock at 70. What is his change in income? **(7 marks)**
   (b) A certain amount is invested for 10 years at the rate of 3 % p.a. compounded annually. The same amount is invested for 10 years simple interest. They both acquired the same value. Calculate the annual simple interest rate. **(7 marks)**

   (Total 14 marks)

   COFINEST has just been liquidated .The liabilities are 15million frs, while its assets realised are 8million.The debt includes 2,500,000 frs preferential claims. Legal expenses amount to 7.5% of the assets and trustee's fees is 5% of the assets.
   (a) What did an unsecured creditors who was owed 750,000 frs receive? **(11 marks)**
   (b) Another unsecured creditor receives 415,600 frs. How much was he owed? **(3 marks)**

   (Total 14 marks)