

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

JUNE 2019

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 a simple scientific calculators, statistical formulae and financial tables where appropriate.

You will be provided with graph paper where necessary.

GCE 2015 Paper 2

1. a) KALLA carried out a series of payments in Arithmetic Progression (AP). His eleventh payment is 4 times the third payment and the sixth payment is 170,000 CFAF. Calculate:
- The common difference (5 marks)
 - The first payment (2 marks)
 - The sum of the first six payments. (3 marks)
- b) Two bills of 500,000 CFAF and 300,000 CFAF mature in 10 years and 6 years, respectively at compound interest. Calculate the rate at which the discounted values of the bills are equal. (6 marks)
- (Total 16 marks)

2. a) What are the fundamental differences between Simple Interest and Compound Interest? (2 only) (4 marks)
- b) Michou deposited 2,500,000 CFAF in a special savings account on January 1, 2018. Given a compound interest rate of 9% p.a., determine the simple interest that will permit this amount to acquire the same value by the end of 2022 as in compound interest. (5 marks)
- c) Mbua Ltd has the following debts to be settled as follows;
- > 67,000 CFAF in 4 years
 - > 96,500 CFAF in 3 years
 - > 20,000 CFAF in 2 years
- Mbua Ltd decided to settle these debts using a single amount of 217,000 CFAF at 10% p.a., determine the due date of the unique payment. (5 marks)
- (Total 14 marks)

- 3 a) MBACHA Plc negotiated a loan "P₀". This loan will be reimbursed by 8 constant annuities knowing that the first amortisation is 699,552.1406 CFAF and the last amortisation is 1,363,229.219 CFAF. Calculate;
- The rate of interest (4 marks)
 - The amount of the constant annuity (2 marks)
 - The interest of the third year (3 marks)
 - The amount of the loan (2 marks)
- b) Clearly differentiate between ordinary loans and debenture loans (3 marks)
- (Total 14 marks)

4. The estimated cash flows on two (02) separate projects machine A and machine B are as follows;

Year	Machine A		Machine B	
	Cash inflow	Cash out flow	Cash inflow	Cash out flow
0	-	500,000	-	500,000
1	600,000	300,000	100,000	100,000
2	800,000	400,000	400,000	200,000
3	400,000	240,000	600,000	300,000
4	200,000	200,000	840,000	400,000

- Using a discount rate of 8% p.a. calculate the Net Present Value of the two projects. (8 marks)
 - Which of the projects should be selected? (2 marks)
 - Determine the payback period for both projects. (4 marks)
- (Total 14 marks)

5. Four women in a partnership make contributions in geometric progression totalling 36,968,750 CFAF to start the business. At the end of the business year, the profit to be shared proportional to their capitals was 8,125,000 CFAF. Given that the minimum contribution was 4,550,000 CFAF and the maximum was 15,356,250 CFAF, how much will each partner receive as profit?

(Total 14 marks)

6. An Ordinary Loan reimbursable by 12 constant payments is such that:

$A_1 + A_2 = 13,515.22$, $A_2 + A_3 = 14,528.86$, where A_K is the amortisation for year K. Determine the following;

- The first amortisation. (5 marks)
 - The last amortization. (3 marks)
 - The constant annuity. (3 marks)
 - The initial amount of the loan. (3 marks)
- (Total 14 marks)

7. A bankrupt entity fails for 96,780,000 CFAF and the assets realised 23,540,000 CFAF of which 8% goes to meet compulsory debt. Legal expenses were 1.2 % of the assets and accountant's charges were 0.8% of the assets. A further 600,000 CFAF is to be paid to the receiver as fees.

How much in the ten thousand can be paid to the other creditors?

(Total 14marks)

8. OK Farmers Group bought a machine worth 600,000 CFAF which is expected to scrap to 150,000 CFAF after 10 years of usage.

- ✓ a) Calculate the annual depreciation charge if the straight line method is used. (3 marks)
 b) Calculate the depreciation rate and its scrap value after three years if the reducing balance method is used. (6 marks)
 c) Prepare the first three lines of the depreciation schedule using the sinking fund method. (5 marks)

(Total 14 marks)

9. a) Poverty Alleviation Ltd carried out a series of savings in Geometric Progression. If the sum of the first and third savings is 20,000 CFAF and the sum of the second and fourth savings is 60,000 CFAF; calculate:

- i) The common ratio. (4 marks)
 ii) The value of the first saving (3 marks)
 iii) The sum of the first 10 savings (3 marks)

- ✓ b) For how long will it take a capital to increase by 40% of its original value at 6% p.a. compound interest? (4 marks)

(Total 14 marks)

10. A public limited company issues a 4,000 debenture loan on 1/1/2015 with nominal value 25,000 CFAF at the compounded interest rate of 6%. The loan is reimbursable at 30,000 CFAF per debenture by constant end of year payments. Given that the last amortisation amounted to 11,561,027.78 CFAF. Calculate:

- ✓ a) The value of each year's constant payment. (4 marks)
 b) The duration of the loan. (5 marks)
 c) Prepare the first 3 lines of the reimbursement table of the loan. (5 marks)

(Total 14 marks)