

COMPETITIVE ENTRANCE EXAMINATION INTO HTTTC BAMBILI	
<u>CYCLE</u> : 1 ST CYCLE	Session: 2010
<u>LEVEL</u> : 1 ST YEAR	
<u>OPTION</u> : ALL	
DURATION: 3hrs	

Instruction answer all the questions

QUESTION 1

As an exercise, a company asked its stores supervisors and purchase manager to independently rank its eight main suppliers(A, B, C, D, E, F, G and H) in order of value to the company, taking into account such factors as reliability, volume, special discount and product quality. The two managers ranked the suppliers in order of preference as follows.

Stores supervisors	E	C	G	H	B	D	A	F
Purchase manager	E	G	B	D	C	A	H	F

- 1.1. Use the SPERSMAN's rank correlation to determine the amount of agreement between the two. Can any conclusion be drawn about the suppliers?

QUESTION 2

FOCOBO ENTERPRISE has just increased its capital and the official values of its shares and the subscription rights are as follows at the Douala Stock Exchange for ten (10) consecutive days (in 000's FCFA)

Value of a share, x_i	98	94	97	98	100	102	102	104	104	101
Value of a subscription right, y_i	6.50	5.40	6.10	6.40	6.90	8.00	7.50	7.50	7.40	7.30

- 2.1. Calculate the linear correlation coefficient between the variable x_i and y_i .
- 2.2. Determine the equation of the regression function y and x which will enable to estimate y .

2.3. Represent the cloud of point and also the regression function on an appropriate graph.

QUESTION 3

In order to acquire good will. Mr. ZOUFU is given the possibility to choose one of the following hypotheses;

12 annuities of 10 000F each payable on every 31st December; the first being paid after two years;

Or 12 equal semi – annual payments; the first being paid after 6 months.

The compound interests are evaluated at 4% per annum.

3.1. Determine the value of the semi – annual payment.

QUESTION 4

SIMPLICITY HOTEL decide to depreciate an equipment whose value is 531 000FCFA within six years by depreciations which are in an increasing arithmetic progression with a common difference of 15 000FCFA. After the third depreciation, the manager decides to depreciate the equipment with depreciation which is consequently the last in the second system of depreciation is equal to the third depreciation.

4.1. Determine the value of each of the first three depreciations.

4.2. Determine the common ratio of the geometric progression.

4.3. Determine the values of the 4th and the 5th depreciation.

QUESTION 5

A capital is invested at a rate 1% during 8 years. The ratio of the interest yielded during the first 3 years and the interest yielded during the last 3 years is 0.802451.

5.1. Determine the rate of investment.

QUESTION 6.

Three bills of Exchange are in geometric progression; their product is 8×10^{15} . their common ratio is 2.

- (a). Calculate the value of the first bill
- (b) Calculate the value of the 2nd and 3rd bills

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