



UGANDA BUSINESS AND TECHNICAL EXAMINATIONS BOARD

Business and Humanities Certificate Examinations

NOV-DEC SERIES

PROGRAMME

NCAF, NCBA

PAPER NAME

ELEMENTS OF BUSINESS STATISTICS

PAPER CODE

NCBS115

YEAR I SEMESTER I

2½ HOURS

WEDNESDAY, 11TH DECEMBER, 2019

INSTRUCTIONS TO CANDIDATES

1. This paper consists of **two** sections **A** and **B**.
2. Section **A** is compulsory and carries **20** marks.
3. Section **B** consists of **six** questions. Answer only **four** questions from this section.
4. All questions carry equal marks.
5. Answers to all each question should begin on a fresh page.
6. **Do not** write on this question paper.
7. All answers and rough work should be done in the official answer booklet provided.
8. Non-programmable electronic calculators, mathematical tables, and graph papers may be used for this examination.
9. Read other instructions on the answer booklet.

SECTION A - (20 MARKS)
Answer all questions in this section

Question One

- (a) Distinguish between a population and a sample. (02 marks)
- (b) State any **two** examples of quantitative variables. (02 marks)
- (c) Outline **two** merits of data tabulation. (02 marks)
- (d) List that $P(A') = 0.47$, find $P(A)$. (04 marks)
- (e) Differentiate between a bar chart and a pie chart. (02 marks)
- (f) List **two** advantages of using interviews in data collection. (02 marks)
- (g) Given $A = \{3,5\}$, list down all the subsets of A . (02 marks)
- (h) Outline **two** features of a good measure of central location. (02 marks)
- (i) List **two** advantages of non-random sampling methods. (02 marks)

SECTION B - (80 MARKS)
Answer only four questions from this section.

Question Two

- (a) State **two** measures of dispersion. (02 marks)
- (b) Explain the meaning of the term skewness. (02 marks)
- (c) Dr. Merlin is the human resource manager at AZPIN co. Ltd. He compiled the data given below showing the minutes by which 30 trainees were late in their 2 months of internship.

5	10	2	10	3	4
14	5	14	22	9	21
4	6	13	41	15	8
13	8	8	26	34	5
14	4	12	23	5	19

- (i) Construct a frequency distribution table with classes of uniform sizes starting 0 - 9, 10 - 19 etc (05 marks)
- (ii) Using the information given, find the;
 - Median. (03 marks)
 - Coefficient of variation. (08 marks)

Question Three

- (a) The data given in table 1 shows the expenses (in million UGX) incurred by TZK Ltd in the month of October, 2018 in four departments;

Table 1

Department	Amount
P	10
Q	30
R	70
S	90

Represent the above data on a pie chart.

(10 marks)

- (b) Explain five merits of using the questionnaire method in the data collection.

(10 marks)

Question Four

The data given in the table 2 shows the wages (UGX '000) earned by employees of Fanya Kazi Ltd for the month of March 2018.

Table 2

Wages	Frequency (f)
450 - 460	9
460 - 470	8
470 - 480	6
480 - 490	5
490 - 500	13
500 - 510	7
510 - 520	10

- (a) Find the number of employs who;
- (i) Were paid.
 - (ii) Earned less than UGX 500,000.
 - (iii) Earned at least UGX 480,000.
- (b) Determine the ;
- (i) Modal wage.
 - (ii) Median wage
- (c) Calculate the mean wage and the range

(02 marks)

(03 marks)

(03 marks)

(04 marks)

(04 marks)

(04 marks)

Question Five

- (a) Given that x and y are independent events such that $P(x) = 0.25$ and $P(y) = 0.3$, find;
- (i) $P(xny)$ (02 marks)
 - (ii) $P(xuy)$ (04 marks)
- (b) A company has a large number of typists. A survey shows that 30 can use word processor (W), 25 are audi- typists (A) and 28 are short hand writers (S). Of the typists who are short hand writers, 3 are audi- typists and can use word processor, 5 are audi- typists and cannot use a word processor, 9 can use a word processor but are not audi- typists, 6 of the audi-typists can use a word processor but not short hand writers.
- (i) Represent the information on the venn diagram. (07 marks)
 - (ii) Determine the number of typists who were involved in the survey? (03 marks)
 - (iii) Find the probability that a typist picked at random has only one skill. (04 marks)

Question Six

- (a) Explain giving **six** reasons why sampling is used in carrying out statistical inquiries. (12 marks)
- (b) Explain **four** reasons that justify the need for a complete survey on the target population. (08 marks)

Question Seven

- (a) Explain **four** qualifiers of a good measure of variation. (08 marks)
- (b) Find the standard deviation of; 14.7, 6.8, -10.5, 0, and 12.3. (06 marks)
- (c) Explain **three** demerits of arithmetic mean. (06 marks)

END