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**THE UNIVERSITY OF ZAMBIA**  
**INSTITUTE OF DISTANCE EDUCATION**  
**SCHOOL OF HUMANITIES AND SOCIAL SCIENCES**  
**DEPARTMENT OF POLITICAL AND ADMINISTRATIVE STUDIES**  
**PAS 2014: RESEARCH METHODS AND TECHNIQUES**

- a) Research Proposal (Chapter 7 of PAS 2014 Module 1)
- b) Research Report (Chapter 11 of PAS 2014 Module 2)

**THE UNIVERSITY OF ZAMBIA**  
**SCHOOL OF HUMANITIES AND SOCIAL SCIENCES**  
**DEPARTMENT OF POLITICAL AND ADMINISTRATIVE STUDIES**

**PAS 2014: RESEARCH METHODS AND TECHNIQUES-DISTANCE TEST**

**INSTRUCTIONS:** Answer **ALL** questions in this question paper.

**DURATION:** 40 Minutes

Q1. Define the following terms: (40 Marks)

- a) Structured Interviews
- b) Study Population
- c) Hypothesis
- d) Focus Group Discussion (FGD)
- e) Saturation point
- f) Type I error
- g) Quasi experimental design
- h) Matrix question

Q2. Contrast between the following: (60 Marks)

- a) Qualitative data and Quantitative data
- b) Independent variable and Intervening variable
- c) Descriptive statistics and inferential statistics
- d) Probability sampling and Non-probability sampling
- e) Primary data and Secondary data
- f) Cross-sectional study and Longitudinal study
- g) Sample statistics and Population parameters

**END OF TEST**

**THE UNIVERSITY OF ZAMBIA**  
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**DEPARTMENT OF POLITICAL AND ADMINISTRATIVE STUDIES**  
**2017/18 ACADEMIC YEAR DISTANCE EXAMINATION**

**PAS 2014: RESEARCH METHODS AND TECHNIQUES**

**INSTRUCTIONS:** Answer **ALL** questions in SECTION A and SECTION B.

**DURATION:** THREE HOURS

**SECTION A: ANSWER ALL QUESTIONS (40 MARKS)**

Q1. Briefly explain the following terms;

- a) Bivariate analysis
- b) Non-probability sampling
- c) Standard error of the mean
- d) Symmetrical distribution
- e) Matrix question

Q2. Define the following terms;

- a) Standard deviation
- b) Extraneous variables
- c) Sample statistics
- d) Hypothesis
- e) Coefficient of determinant

Q3. Contrast the following;

- a) Type I error and Type II error
- b) Qualitative data and Quantitative data
- c) Sampling error and Standard error
- d) Overall objective and specific objective
- e) Normal distribution and Standard normal distribution

**SECTION B: ANSWER ALL QUESTIONS (60 MARKS)**

Q1. The table below shows the relationship between copper prices and government revenue in Zambia during a seven-year period.

*Government Revenue and Copper price (1967 – 1973)*

Year	Copper Price (K/ton) X	Government Revenue (K Million) Y
1967	810	306
1968	887	315
1969	1,048	401
1970	1,011	432
1971	767	309
1972	746	276
1973	3,156	445

- Compute the regression equation to show the dependence of government revenue on copper price.
- Interpret the meaning of the observed regression coefficient within the context of the equation
- If government revenue in 1979 was 210 (K Million), what was the price of copper?
- Compute the correlation coefficient and interpret the answer.
- Compute the Coefficient of determinant and interpret the answer.

Q2a. Use the standard normal table to complete the table below;

Z-score	The proportion of the areas associated with the score	The proportion of the area below the score	The proportion of the area above the score
-0.80			
1.07			
2.63			
0.89			
-1.33			

Q2b. The age of the members of a village council is normally distributed with a mean of 68 years and a standard deviation of 4 years.

- a) Mr. Phiri is 71 years old, what proportion of the members is older than him?
- b) Mr. Nawa is 65 years old, what percentage of the members is younger than him?
- c) Suppose the village council has 210 members, how many people fall between Mr. Phiri and Mr. Nawa?
- d) Mr. Malungo claims to be older than 67 % of the members. How old is he?

Q3a. A students' union is trying to pressure government to increase the monthly meal allowance paid to students. Government claims that the mean amount students spent on food is k600. The union on the other hand, is disputing this amount. You have done a research to ascertain the Unions claim. Using a random sample of 100 students, your study has found that the mean amount students spend on food per month is k602.50, with a standard deviation of k12. Use a 5 % level of significance to ascertain if the claim by government is true.

Q3b. The following frequency table of rent costs for a bed space was computed for a boarding house near UNZA.

Rent (Kwacha)	Frequency
226 – 250	2
251 – 275	7
276 – 300	12
301 – 325	8
326 – 350	2
351 – 375	2
376 – 400	4
401 – 425	1

- (i) Compute the mean and interpret the answer.
- (ii) Compute the standard deviation and interpret the answer.

**END OF EXAMINATION**

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**DEPARTMENT OF POLITICAL AND ADMINISTRATIVE STUDIES**  
**2017/18 ACADEMIC YEAR DISTANCE EXAMINATION**

**PAS 2014: RESEARCH METHODS AND TECHNIQUES**

**INSTRUCTIONS:** Answer **ALL** questions in SECTION A and SECTION B.

**DURATION:** THREE HOURS

**SECTION A: ANSWER ALL QUESTIONS (40 MARKS)**

Q1. Distinguish between the following;

- a) Pure research and applied research
- b) Independent variable and dependent variable
- c) Ordinal scale and interval scale
- d) Type I error and type II error
- e) Cross sectional study and longitudinal study
- f) Questionnaire and interview guide
- g) Purposive sampling and systematic sampling
- h) Quantitative research and qualitative research
- i) Conceptual framework and theoretical framework
- j) Filter question and Matrix question

Q2. Define the following terms;

- a) Research
- b) Standard deviation
- c) Symmetrical distribution
- d) Nominal data
- e) Study population
- f) Research design
- g) Non-probability sampling
- h) Data analysis

- i) Matrix question
- j) Research proposal

Q3. Indicate if the statement below are **TRUE** or **FALSE** (10 Marks)

- a. A parameter is a numeric characteristic of a sample
- b. A one tailed test is a statistical test where extreme results leading to the rejection of the null hypothesis are located on either tail.
- c. A scientist testing the toxicity of a chemical in a laboratory changes the significance level from 10% to 1% thereby increasing type II error.
- d. The proportion of the area under the normal curve which lies between a Z-score of 1.55 and 2.55 is .0551.
- e. The analysis of variance is a statistical test that is used to compare two or more group means.
- f. The use of the laws of probability to make inferences and draw statistical conclusions about population based on sample data is referred to as descriptive statistics.
- g. The correlation coefficient  $r$ , ranges between  $-1 \leq r \leq +1$ .
- h. A cumulative frequency distribution shows the number of observations falling above a certain point.
- i. The standard deviation of a sampling distribution is called the standard error of the mean
- j. Snowball sampling is an example of the probability sampling.

## SECTION B

Q1. Twelve (12) children) were given an intensive training in a quest to raise their intelligence Quotient (IQ). The IQs of the children before and after the training are given below.

Initial IQ (X)	Post training IQ (Y)
89	103
95	97
82	100
101	98
91	98
85	88
96	97
93	105
86	99
99	110

90	107
84	86

Compute the following:

- a) Regression equation
- b) The expected IQ after training from a child with an Initial IQ of 80
- c) Correlation coefficient
- d) Correlation of determinant

Q2. An investor is considering alternative towns, Lusaka and Kitwe for the location of a supermarket. He decides to use the mean household income in the two cities as the proxy variable for purchasing power. For a random sample in Lusaka with 30 households, the average monthly income is k4500, with a standard deviation of k150. For a random sample of 40 households in Kitwe, the average monthly income is k4460, with a standard deviation of k240. The investor eventually decides to construct a supermarket in Lusaka on the premise that the purchasing power of Lusaka residents is more than that of Kitwe residents. Is his decision justified? Test at 1% level of significance. (15 Marks).

Q3. The data below shows the number of 50kg bags of maize harvested by 1,000 small scale farmers grouped in intervals of 5.

Class Interval	Frequency
10-14	8
15-19	30
20-24	40
25-29	94
30-34	126
35-39	156
40-44	176
45-49	138
50-54	118
55-59	70
60-64	20
65-69	16
70-74	8

Compute the following;

- a. Mean and interpret the answer

- b. Standard deviation and interpret the answer

**END OF EXAMINATION**

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**DEPARTMENT OF POLITICAL AND ADMINISTRATIVE STUDIES**  
**2018/19 ACADEMIC YEAR**

**PAS 2014: RESEARCH METHODS AND TECHNIQUES-DISTANCE TEST**

**INSTRUCTIONS:** Answer **ALL** questions in this question paper.

**DURATION:** 50 Minutes

Q1. Define the following terms: (40 Marks)

- a) Research
- b) Research problem
- c) Study population
- d) Research design
- e) Dependent variable
- f) Experimental study design
- g) Matrix question
- h) Unstructured interviews
- i) Sampling
- j) Research hypothesis

Q2. Contrast between the following: (60 Marks)

- a) Qualitative data and Quantitative data
- b) Primary and secondary data
- c) Interview guide and questionnaire
- d) Probability sampling design and non-probability sampling design
- e) Overall objectives and specific objectives
- f) Pure research and applied research

**END OF TEST**

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PAS 2014: RESEARCH METHODS AND TECHNIQUES

DISTANCE TEST TWO 2018/19

**Instructions:**

- a) Answer **BOTH** questions. Question 1 carries 30 Marks while question 2 carries 70 Marks.
- b) Show your working

Q1. In a normally distributed sample of 1200 children, the mean age is 14.4 years with a standard deviation of 2.5 years.

- a. How many children are between 12 and 16 years?
- b. How many children are aged between 15 and 16 years?
- c. How many children are aged below 15 years?
- d. How many children are older than 18 years old?
- e. What is the percentage of children who are younger than 8 years old?
- f. What is the probability of a child in this sample being older than 15 years?

Q2. The table shows the relationship between copper prices and government revenue in Zambia during a **seven** (7) year period.

Government Revenue and Copper Prices, 1967-1973

Year	Copper Price (K/Ton) X	Government Revenue (K million)
1967	810	276
1968	887	306
1969	1048	401
1970	1011	432
1971	767	309
1972	746	315
1973	1156	385

Compute the following:

- a. Regression equation
- b. Interpret the meaning of observed regression coefficient within the context of the equation
- c. If government revenue in 1979 was 210 (K million), what was the price of copper?
- d. Compute the correlation coefficient and interpret the answer
- e. Compute the coefficient of determinant and interpret the answer.

**END OF TEST**

**THE UNIVERSITY OF ZAMBIA**  
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**2018/19 ACADEMIC YEAR FULL-TIME/PARALLEL EXAMINATION**

**PAS 2014: RESEARCH METHODS AND TECHNIQUES**

**INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A AND SECTION B.**  
**DURATION: THREE HOURS**

**SECTION A: ANSWER ALL QUESTIONS (40 MARKS)**

Q1. Write reasonable and concise notes on the steps in the research process: (20 Marks)

- a) Formulating the research problem
- b) Conceptualizing the research design
- c) Constructing instruments for data collection
- d) Selecting a sample
- e) Writing a research proposal
- f) Data collection
- g) Data Analysis
- h) Writing a research report

Q2. Distinguish between the following concepts: (20 Marks)

- a) Descriptive research and Correlational research
- b) Qualitative research and Quantitative research
- c) Quasi-experimental design and experimental design
- d) Type I error and Type II error
- e) Parametric test and non-parametric test
- f) Dependent variable and intervening variable
- g) Sample statistics and population parameters
- h) Standard deviation and standard error of the mean
- i) Normal distribution and Standard normal distribution
- j) Directional hypothesis and non-directional hypothesis

k) Research hypothesis and null hypothesis

**SECTION B: ANSWER ALL QUESTIONS (60 MARKS)**

Q1. An entrepreneur running a factory argues that there is a difference in the number of mistakes made by his employees, A, B and C. Data on the number of errors made by each employee was collected on five successive days as shown below.

Worker A	Worker B	Worker C
8	8	15
5	10	10
2	4	7
3	12	10
2	11	13

Using ANOVA, at the level of significance  $\alpha = 0.05$ , test the hypothesis that there is a difference in the number of mistakes by the employees. (25 Marks)

Q2. A second hand car dealer had 10 cars for sale. She decided to investigate the association between the age of a car, x years, and the mileage, y thousand kilometers. The data collected is shown in the table below.

Age x Years	2	2.5	3	4	4.5	4.5	5	3	6	6.5
Mileage y (Thousand Kilometers)	2.5	34	33	37	40	45	49	30	58	58

Undertake the following: (20 Marks)

- Compute the regression equation to show the dependence of mileage of a car on age.
- If a car had a mileage of 72, what was its age?
- Compute the correlation coefficient and interpret the answer.
- Calculate the coefficient of determinant and interpret the answer.

Q3. Muna investigated whether taking Vitamin C tablets every day during the school term affects chances of a student getting a cold. The results are obtained are shown below.

	<b>Vitamin C tablet taken</b>	<b>Vitamin C tablet not taken</b>
Got a cold during the term	15	22
Did not get a cold during the term	100	93

Using chi-square, at the level of significance  $\alpha = 0.01$ , test the hypothesis that taking Vitamin C tablet affects chances of getting a cold. (15 Marks).

**END OF EXAMINATION**

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**DEPARTMENT OF GOVERNMENT AND MANAGEMENT STUDIES**  
**2020/21 DISTANCE TEST ONE**

**PAS 2014: RESEARCH METHODS AND TECHNIQUES**

**Duration: You have 2 hours in which to write and upload on Astria.**

**Instructions: Answer ALL the questions in this question paper.**

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Q1. Write concise and precise definition of the following: (40 Marks)

- a. Applied research
- b. Research process
- c. Research problem
- d. Research design
- e. Intervening variable
- f. Categorical data
- g. Contingency question
- h. Questionnaire
- i. Sampling
- j. Literature review

Q2. Contrast between the following: (60 Marks)

- a. Qualitative research and quantitative research
- b. Primary data and secondary data
- c. Interview guide and questionnaire
- d. Systematic sampling and purposive sampling
- e. Experimental design and quasi experimental design
- f. Ordinal scale and interval scale

END OF TEST  
**THE UNIVERSITY OF ZAMBIA**  
**SCHOOL OF HUMANITIES AND SOCIAL SCIENCES**  
**DEPARTMENT OF GOVERNMENT AND MANAGEMENT STUDIES**  
**2020/21 DISTANCE TEST TWO**

**PAS 2014: RESEARCH METHODS AND TECHNIQUES**

**Duration: You have 2 hours in which to write and upload on Astria.**

**Instructions: Answer ALL the questions in this question paper.**

Q1. The following frequency table of rent costs for a bed space was computed from boarding houses near UNZA.

<b>Rent (Kwacha)</b>	<b>Frequency</b>
226 – 250	5
251 -275	9
276 – 300	14
301 – 325	8
326 – 350	3
351 – 375	1

Compute the following: (30 Marks)

- a. The mean and interpret the answer.
- b. The Standard deviation and interpret the answer.

Q2. Twelve (12) children were given an intensive training in a quest to raise their Intelligence Quotient (IQ). The IQs of the children before and after the training are given below.

Initial IQ (X)	Post training IQ (Y)
89	103
95	97
82	100
101	98
91	98
85	88
96	97
93	105
86	99
99	110

Compute the following: (70 Marks)

- Regression equation
- The expected IQ after training from a child with an initial IQ of 80
- Correlation coefficient
- Coefficient of determinant

**END OF EXAMINATIONS**

**THE UNIVERSITY OF ZAMBIA**  
**SCHOOL OF HUMANITIES AND SOCIAL SCIENCES**  
**DEPARTMENT OF POLITICAL AND ADMINISTRATIVE STUDIES**  
**2020/21 ACADEMIC YEAR DISTANCE EXAMINATION**  
**PAS 2014: RESEARCH METHODS AND TECHNIQUES**

**INSTRUCTIONS:** Answer **ALL** questions in SECTION A and SECTION B.

**DURATION:** THREE HOURS

SECTION A: ANSWER ALL QUESTIONS (40 MARKS)

Q1. Briefly explain the following terms;

- a. Bivariate analysis
- b. Non-probability sampling
- c. Standard error of the mean
- d. Symmetrical distribution
- e. Matrix question

Q2. Define the following terms;

- a. Standard deviation
- b. Extraneous variables
- c. Sample statistics
- d. Hypothesis
- e. Coefficient of determinant

Q3. Contrast the following;

- a. Type I error and Type II error
- b. Qualitative data and Quantitative data
- c. Sampling error and Standard error
- d. Overall objective and specific objective
- e. Normal distribution and Standard normal distribution

**SECTION B: ANSWER ALL QUESTIONS (60 MARKS)**

Q1. A random sample of 10 employees from UNICEF in Lusaka is shown below.

Year of Service <b>X</b>	Monthly Salary (US \$) <b>Y</b>
2	330
3	300
1	270
5	415
5	285
7	430
4	350
7	400
6	325
9	425

- Compute the regression equation to show the dependence of salary on years of service.
- The monthly income for an individual who has been with organization for 11 years.
- Compute the correlation coefficient and interpret the answer.
- Compute the Coefficient of determinant and interpret the answer.

Q2. The data below shows the number of 50kg bags of maize harvested by small scale farmers.

<b>Class-interval</b>	<b>Frequency</b>
10 – 14	8
15 – 19	30
20 – 24	40
25 – 29	94
30 – 34	126
35 – 39	156
40 – 44	176
45 – 49	138
50 – 54	118
55 – 59	70

- Compute the mean and interpret the answer.
- Compute the standard deviation and interpret the answer.

Q3. The amount of a certain trace element in blood is known to vary with a standard deviation of 14.1 for male blood donors and 9.5 for female blood donors. A random sample of 75 male and 50 female donors yield concentration means of 28 and 33 respectively. At 5% significance level, test the hypothesis that the concentration of the elements is the same for men and women. Note that the critical value is **1.96**

**END OF EXAMINATION**