

CHUKA

UNIVERSITY



UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF POSTGRADUATE
DIPLOMA IN EDUCATION**

PGDE 742: STATISTICAL METHODS IN EDUCATION

STREAMS: PGDE (L1B1)

TIME: 3 HOURS

DAY/DATE: TUESDAY 05/10/2021

2.30 A.M. – 5.30 P.M.

INSTRUCTIONS

- Answer ANY four (4) questions
- Do not write anything on the question paper

1. a) Highlight the significance of statistical methods in education. (9 marks)
- b) Distinguish the following terms as used in statistics of education.
 - i. Population and sample (2 marks)
 - ii. Continuous variable and discrete variable. (2 marks)
 - iii. Parameter and statistic. (2 marks)

2. Mr. Kamau has been keeping record of all expenses he has incurred in running his car for the last ten years as shown below: -

Age of car (years)	1	2	3	4	5	6	7	8	9	10
Expenses (Ksh 100)	2	3	5	8	8	9	10	13	12	13

Calculate Pearson's product moment coefficient of correlation and interpret your results.

(15

marks)

3. The experimental and control groups generated the following results in an experiment to determine the effectiveness of a stress management counselling strategy.

Experimental	6	7	9	5	4	3	2	8	10	7
Controlled	3	5	9	4	2	1	0	6	7	4

Test the hypothesis that there is no significant difference between the experimental group and controlled group given that the critical value at 0.05 level of significance is 1.833 level from the t statistics tables. (15 marks)

4. At a police check point, the speeds in Km/h of the first 50 vehicles were recorded as follows:

Speed	Number of vehicles
10-19	3
20-29	1
30-39	2
40-49	5
50-59	6
60-69	11
70-79	9
80-89	8
90-99	3
100-109	2

Calculate the

- a) Mean speed (3 marks)
- b) Median (4 marks)
- c) Modal class (1 mark)
- d) Variance (5 marks)
- e) Standard deviation (2 marks)

5. The table below shows the length in minutes of calls made through and exchange in one day.

Time	1-3	4-6	7-9	10-12	13-15
Frequency	12	7	6	3	2

Find:

- a) The upper quartile (3 marks)
 - b) The lower quartile (3 marks)
 - c) Semi-interquartile range (3 marks)
 - d) 60th percentile (3 marks)
 - e) 7th decile (3 marks)
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