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P425/2

Paper 2

2¹/₂ hours



Uganda Advanced Certificate of Education
S5 MATHEMATICS
TOPICAL TEST 1 (DESCRIPTIVE STATISTICS)
2 hours :30 minutes

INSTRUCTIONS:

- ≈ Answer all the items
- ≈ All necessary working must be shown clearly.
- ≈ Give meaningful conclusions at the end of each item

Item one:

In certain school beginning of term exams results for end of term were recorded as shown in the table below by the class teacher showing the average of each student in all subjects and they were to be depended on to determine whether the modal average mark is less than 50 they should have external facilitators to boost performance

Average marks	Number of students
Below 10	6
10 and under 25	11
25 and under 35	17
35 and under 45	28
45 and under 50	20
50 and under 65	15
65 and under 80	3

Task;

Using a statistical diagram, determine whether the school should have external help to boast learners' performance.

Item Two :

The National Agricultural Research Organization (NARO) is evaluating the performance of a new drought – resistant maize variety across different regions in Uganda. Below is the yield data collected by Agricultural statisticians from 40 farms across the country in tons per hectare.

Yield (tons/ha)	Number of Farms
2.0 – 2.5	3
2.5 – 3.0	7
3.0 – 3.5	12
3.5 – 4.0	10
4.0 – 4.5	5
4.5 – 5.0	3

Tasks

- Illustrate the data on an Ogive and use it to determine the median yield, the interquartile range and the 90th percentile.
- The standard maize variety has a mean yield of 3.2 tons/ha with a standard deviation of 0.6 tons/ha. Compare the performance of the new variety with the standard variety using appropriate statistical measures.
- If farms with yields in the top 20% are selected for seed multiplication, what should be the minimum yield threshold?

Item three

In a certain calendar printing factory, the length of each calendar made has been organized into a cumulative frequency distribution as shown below

Length (cm)	<20	<30	<35	<40	<50	<60
Cumulative frequency	4	20	32	42	48	50

From market research team, it has been duly determined that the commonest calendar length sold is the one with a median length. And the production team will produce more of these.

Task:

- a) Using a cumulative frequency curve help the production team determine the median length they have to produce for the next output units.
 - b) As well a certain client has sent instruction to produce for them a length in 80th percentile, but the production team need the actual length to nearest whole to be consider for this client
 - c) Determine the standard deviation of the length.
- (12 scores)

Item 4

A group of forty-five women did go to Health centre V for antenatal care during the month of August 2024. Their ages were collected as started below;

17	17	17	19	19	19	20	22	22	22	23	23	24	25	25
25	26	26	26	26	27	27	28	28	28	29	29	29	30	32
32	32	34	34	35	35	35	35	36	37	38	38	44	45	48

The nurses in charge of the care to the pregnant mothers we tasked to find the median ages and as well find the 75% age of these mothers. For it was to be forward to the District healthy commission to make certain decision on providing better family planning options incase the 75% was greater than 38 years or build a bigger expecting mother’s ward incase the median age was less or below 28

Task:

- a) Construct a grouped frequency table for the women’s ages,
- b) Draw a statistical diagram that you will use as a basis for the district health commissioner to make a decision on what of the two options they should consider

“MATHEMATICS MUSCLES GLOW BY PRACTICING”