STATISTICAL METHODS

1. (a) (i) 9600-800 = 8,800,000 Barrels

(ii) 21,150,000 Barrels.

(iii) 21,150,000\30 = 705,000 Barrels

2. Graph

(i) 29.3% (29 - 29.5%) 29%

(ii) 4.75%/4.8%/4.9%

(4.75% - 4.9%)

(iii) Describe the trend of the value of coffee exports from years 1999 to 2003.

- The value was generally declining over the five year period.
- The value was highest in 1999.
- The decline between 1999 and 2000 was minimal/gradual.
- The highest drop was between 2000 and 2001
- There was a minimal drop between 2002 and 2003.
- The decline between 2001 and 2002 was minimal/gradual.
- The value was lowest in 2003.

(iv) Explain three factors which may have led to the increased export earnings from horticultural produce in Kenya between years 1999 and 2003.

- Improved technology which leads to advanced crop husbandry/increase the volume of fresh horticultural products.
- Aggressive promotion of trade abroad leading to a wide/ready market in foreign countries.
- Improved ways of packaging have made the produce more competitive/ attractive,

- Improved infrastructure/air/road transport have helped in the quick means of transportation of fresh produce to the market.
- The declining benefits from traditional agricultural exports leading to the expansion of the areas under horticultural crops.
- The government has encouraged the formation of organizations that are assisting horticultural farmers.

(v) Give three advantages of using simple line graphs to represent data.

- Give clear visual impression.
- Easy to construct.
- Easy to interpret.
- Can be used to represent a wide variety of variables.
- Appropriate for comparison.

(b) Reasons why Kenya's agricultural export earning generally are low

- Kenya sells most of her agricultural products in their raw form and they are priced lowly.
- International prices keep fluctuating from year to year.
- Prices of some commodities are externally determined.
- There is competition from other producing countries/from other similar products.
- Some products are inferior in quality.
- There are fixed quarters for some agricultural products.
- Decline in quantities of some agricultural exports.

3. (a) Statistics It refers to the art or science that is concerned with the interpretation of numeric information.

Statistical data	Refers to the information collected and arranged in a systematic manner.
Statistical methods	Refers to the techniques used in collecting, recording, analyzing and presenting data.

(b) Primary data and Secondary data

(c) Closed-ended (rigid) - Open-ended

4. (a)
- The method should be inexpensive.
- Should be time saving
- Should give accurate data
- Most applicable method

(b)
- Discreet data refers to the non-continuous data over time given in whole numbers only e.g.
- Total population in a nation.
- Monthly rainfall totals.
- No. Of livestock per district
- Continuous data can be given in any value including decimals e.g. 1.8km.

5. Sampling refers to the process by which a representative portion of the whole phenomena under study is analyzed and generalized/ generalization is made.

Types of sampling

Systematic sampling Stratified sampling Random sampling

6. (a)
   - Calculation of percentages
   - Measuring of Central tendency (mean, median and mode)
   - Frequency distribution

   (b)
   - Predicting for future trends.
   - Showing changes through time
   - Establishing Geographical relationships
   - For economic planning
   - For explaining geographical phenomena.
   - Useful for making comparisons.

7. (i)
   - Simple iine graph
   - A combined line and bar graph
   - Simple bar graph

   (ii)
   - The simple bar graph
   - Prominent values stick out well
   - Bars are appealing to the eye
   - Easy to draw, read and interpret the data represented

8. (i) A set of pre-questions which are related to the topic of study.

   (ii)
   - Its a source of first hand information
   - The researcher can ask for clarification from the respondent.
   - Similar questions are used for all respondents and comparison can easily be made.
   - When posted, rigid questionnaires reduce fieldwork expenses.

(iii) Interview involves collection of information by asking questions directly and recording the answers given. In this method the researcher established contact with the respondent and agree on time for face to face interview with the respondent. Interviews can also be carried out on telephone with the interviewee.

9. Methods of data recording

Tabulation This is recording of data by arranging facts of figures in form of table or list.

Photographing This is done by use of a camera to record geographical information.

Tape recording This can be done when one is collecting data through an oral interview where one uses tape recording device to record conversation.

Tallying Used when the data is collected through counting. One counts and puts a vertical strike for every item counted, on the fifth count one puts a diagonal crossing the four strokes.

10. Data refers to facts and figures collected from the field.

11. The mean is

$$72 + 60 + 65 + 70 + 65 + 80 + 65 + 70 + 80 + 84 + 63 + 75 + 63 + 71 + 74$$

$$= \frac{1057}{12} = 70.47$$

12. This is got by arranging the data in an ascending order as follows: 60, 63, 63, 65, 65, 65, 70, 70, 71, 72, 74, 75, 80, 80, 8.4. The middle number is the median: 70