

MS 211 – GROUP ASSIGNMENT

Instructions

1. Arrange yourself in a group of fifteen (15) people.
2. The assignment must be typed in Times New Roman with 12 Font size.
3. The assignment must be submitted on 07th February, 2025.
4. The use of AI will attract disqualification of your work.
5. Any copied work will be awarded a zero (0).

Question one

XYZ Company Ltd. is contemplating on four different methods it can use to process red beans at its plant at Morogoro. These beans are sold at Tshs 1,000/= per kg after being processed. The possible markets for the processed beans are Dar es Salaam, Mwanza, Dodoma and Arusha. The variable costs of processing 200,000kg of the red beans using the four methods and then transporting them to the potential markets are provided in the table below:

Variable costs of Processing 200,000 kg of red beans (Tshs. '000')

Decisions	States of Nature			
	Dar	Mwanza	Dodoma	Arusha
Method 1	140,000	90,000	100,000	50,000
Method 2	110,000	100,000	80,000	75,000
Method 3	90,000	95,000	100,000	115,000
Method 4	80,000	100,000	110,000	125,000

Required:

- a) Which method would you recommend to XYZ Company Ltd. using Maximin approach?
- b) Which method would you recommend to XYZ Company Ltd. using Maximax approach?
- c) Suppose that you wished to use EMV decision approach to reach the optimal decision, which method would you have recommended?
- d) In connection to part (c) above, suppose all the 200,000 kg of red beans are sold, what should be the expected contribution?

Question two

A company employing 60 people pays its employees an average wage of TZS 725 per hour with a standard deviation of TZS 60. Suppose the wages are approximately normally distributed.

Required:

- a) Determine the proportion of workers receiving wages above TZS 770.
- b) Determine the proportion of workers receiving wages between TZS 675 and TZS 770 an hour inclusive.
- c) Determine the number of workers receiving wages between TZS 675 and TZS 770 an hour inclusive
- d) Determine the minimum hourly wage received by the highest 5% of the employees.

Question 3

The College of Education at a certain university conducted a study to compare two methods of teaching reading. The college randomly selected two groups of elementary school children and assigned each group to one of the two teaching methods for a period of six months. Reading achievement was measured using a comprehension test. The results are shown in the table below:

Method	No. of Children per Group	Statistics	
		\bar{X}	S^2
Method 1	25	64	52
Method 2	29	69	71

Required:

- Which data analysis method is appropriate for analyzing this data, and why?
- Conduct an appropriate test to determine whether there is no difference in the mean scores on the comprehension test for the two teaching methods. Provide a recommendation on the best method to use, if applicable.

Question 4

The following table shows the entrance qualifications and the final degree classifications of particular students at KOBE University:

Entrance Qualifications	Final Degree Qualifications		
	First Class	Upper Second Class	Lower second Class
Division 1	10	24	18
Division 2	25	30	42
Division 3	16	27	38

Is there significant relationship between the entrance qualification and the final degree classification? Use $\alpha = 5\%$.