

UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAM PAPER 2007

TITLE OF PAPER : **DESCRIPTIVE STATISTICS**

COURSE CODE : **ST 132**

TIME ALLOWED : **TWO (2) HOURS**

REQUIREMENTS : **CALCULATOR AND GRAPH PAPER**

INSTRUCTIONS : **ANSWER QUESTION ONE AND ANY OTHER
TWO QUESTIONS**

Question 1

The following scores were obtained by a UNISWA first year class on an Academic Communication Skills' test:

60 94 75 82 72 57 92 75 85 77 91 72 85 64 78 75 62 49 70 94 72 84 55 90 88 81 64 91 79 66
68 67 74 45 76 73 68 85 73 83 85 71 87 57 82 78 68 70 71 78 69 98 65 61 83 84 69 77 81 87
79 64 72 55 76 68 93 56 67 71 83 72 82 78 62 82 49 63 73 89 78 81 93 72 76 73 90 76.

Calculate and comment on the coefficient of skewness of these scores.

(20 Marks)

Question 2

- a) A community in Mbabane has a population 900 economically active people. 460 males and 140 females are employed. 40 males and 260 females are unemployed. One of these individuals is selected at random for a tour throughout the community to publicize the advantages of establishing new industries in the community.
- What is the probability of selecting an employed male?
 - What is the probability of selecting an unemployed female?
- (8 Marks)
- b) In a lottery 3 numbers are drawn from a total 10 numbers (listed from 1 to 10) and a fourth bonus number is also drawn without replacement. What is the probability that this sequence of numbers is drawn; 1, 7, 3, 6. (5 Marks)
- c) Three cards are drawn in succession, without replacement, from an ordinary deck of playing cards. Find the probability that the first card is a red ace, the second card is a ten or jack, and the third card is greater than 3 and less than 7. (7 Marks)

Question 3

A statistics lecturer conducted a study to investigate the relationship between performance of his students on exams and their anxiety. Ten students from his class were selected for the experiment. Just prior to taking the final exam, the 10 students were given an anxiety questionnaire. Here are final exam and anxiety scores for the 10 students:

Anxiety	28	41	35	39	31	42	50	46	45	37
Final exam	82	58	63	89	92	64	55	70	51	72

- Determine the strength of the relationship between exam scores and anxiety. (8 marks)
- Construct a regression equation for predicting the dependent variable, and calculate the standard error. (12 Marks)

Question 4

The table below gives quarterly data of food consumer price indices for Swaziland - 1997-1999:

Year	Quarter			
	1	2	3	4
1997	113.5	117.6	119.0	124.2
1998	128.0	129.4	130.7	134.3
1999	137.3	140.5	142.2	143.8

Using the method of moving averages, find the average seasonal variations, and estimate the food consumer price indices for the first two quarters of 2000. (20 Marks)