

UNIVERSITY OF SWAZILND
FACULTY OF HEALTH SCIENCES
FINAL EXAMINATION PAPER, MAY 2008

TITLE OF PAPER: HEALTH STATISTICS

COURSE CODE: HSC 404

TIME ALLOWED: TWO (2) HOURS

MARKS: 75

INSTRUCTIONS:

- 1. THERE ARE THREE (3) QUESTIONS IN THIS PAPER**
 - 2. ANSWER ALL THREE QUESTIONS**
 - 3. EACH QUESTION IS ALLOCATED 25 MARKS**
 - 4. WRITE LEGIBLE**
 - 5. ALL FINAL ANSWERS MUST BE TO THE NEAREST 1/10.**
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QUESTION 1

A. Which measurement levels are the following variables measured on (10)

- (i) Performance in the Health Statistics, measured by an examination.
- (ii) Participants' home language.
- (iii) Choice of diet (vegetarian, nonvegetarian).
- (iv) Highest degree obtained (none, adult literacy, high school, bachelor's, master's, doctorate)
- (v) Method of contraception used.

B. According to News World Syndicate, in 1986 the numbers of followers of the world's major religions were 835 million for Christianity, 420 million for Islam, 322 million for Hinduism, 300 million for Confucianism, 210 million for Buddhism, 79 million for Shito, 50 million for Taoism, and 12 million for Judaism.

- (i) Construct a frequency distribution table of this data. (5)
- (ii) Construct a bar graph for these data. (5)
- (iii) Calculate the mean and median for these data. (5)

TOTAL 25

QUESTION 2:

A survey that randomly selected countries in Africa and in Europe made the following findings on the number of people who reside in each:

AFRICA		EUROPE	
Nigeria	8000	India	2956
Swaziland	1129	China	5926
Botswana	2058	Pakistan	6542

Zimbabwe	2705	Iraq	9495
TOTAL	13892	TOTAL	24919

- (i) What is the coefficient of variation for people who reside in Europe? (6)
- (ii) Calculate the coefficient of variation of people who dwell in Africa? (6)
- (iv) Considering the people who reside in Africa and those who dwell in Europe, amongst which group is less variability, Explain. (3)
- (iv) What is the skewness of people who live in Europe? (4)
- (v) What percentage of people who reside in Africa are Swazis? (3)
- (vii) Calculate the proportion of Chinese people who live in Europe. (3)

TOTAL 25

QUESTION 3

A. Below is the correlation between the number of services offered in a health facility (independent variable -IV) and the number of visits (dependent variable -DV) to the health facility made by clients.

Correlations

		number of visits	number of services
number of visits	Pearson Correlation	1	-.096**
	Sig. (2-tailed)	.	.002
	N	1003	1003
number of services	Pearson Correlation	-.096**	1
	Sig. (2-tailed)	.002	.
	N	1003	1003

** . Correlation is significant at the 0.01 level (2-tailed).

- (i) Explain the results, consideration the strength, direction, significance. (6)
- (ii) What is the meaning of the results? (3)

B. A regression analysis of the number of services (IV) offered in a health facility and the number of visits (DV), revealed the results below.

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.81E+09	1	6808951301.5	9.389	.002 ^a
	Residual	7.26E+11	1001	725176983.58		
	Total	7.33E+11	1002			

a. Predictors: (Constant), number of services

b. Dependent Variable: number of visits

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	57819.643	2757.791		20.966	.000
	number of services	-584.647	190.799	<u>-0.096</u>	-3.064	.002

a. Dependent Variable: number of visits

(i) Interpret the ANOVA output. (6)

(ii) What is your intercept, and your slope for the regression analysis? (2)

C. A researcher collected data on the participants' pulse rate and obtained the following results.

Pulse rate (beats per minute)	Frequency
60 – 64	8
65 – 69.....	32
70 – 74.....	20
75 – 79.....	35
80 – 84.....	15
TOTAL	N = 100

b. Calculate the 78th (beats per minute) percentile. (4)

c. What is the percentile for 72 beats per minute? (4)

TOTAL 25 MARKS