nAMIBIA UnIVERSITY
OF SCIEnCE AnD TECHnOLOGY

FACULTY OF HEALTH, APPLIED SCIENCES AND NATURAL RESOURCES

DEPARTMENT OF HEALTH SCIENCES

QUALIFICATION : BACHELOR OF HUMAN NUTRITION	
QUALIFICATION CODE: 08BOHN	**LEVEL:** 8
COURSE CODE: CAN 811S	**COURSE NAME:** COMPUTER APPLICATIONS IN NUTRITION
SESSION: JULY 2022	**PAPER:** THEORY
DURATION: 3 HOURS	**MARKS:** 100

SUPPLEMENTARY/SECOND OPPORTUNITY EXAMINATION PAPER	
EXAMINER(S)	MRS MARI-LOUISE JEFFERY DR DIBABA GEMECHU
MODERATOR:	MR ERICK UUKULE

INSTRUCTIONS
1. Answer ALL the questions.
2. Write clearly and neatly.
3. Number the answers clearly.

PERMISSIBLE MATERIALS

Nonprogrammable scientific calculator

THIS QUESTION PAPER CONSISTS OF 7 PAGES (Including this front page)

SECTION A

QUESTION 1   **(10 MARKS)**

Select the most appropriate answer from the options provided. (Each correct answer earns 1 mark)

1.1 The major characteristics of the introduction of ICT is:
   a. The increasing understanding of the possibilities it has for more effective communication of information.
   b. The scope it allows for greater variety and flexibility of teaching and learning.
   c. It has little potential to enhance knowledge.
   d. A and B.

1.2 Globalization has decelerated the advancement in communication and technologies in areas such as computer, internet, mobile phones, television and the satellite dish.
   a. True
   b. False

1.3 Precision nutrition aims to:
   a. Prevent chronic diseases by tailoring dietary interventions or recommendations to one or a combination of an individual's genetic background, metabolic profile, and environmental exposures.
   b. Manage chronic diseases by tailoring dietary interventions or recommendations to one or a combination of an individual's genetic background, metabolic profile, and environmental exposures.
   c. Transmit chronic diseases by tailoring dietary interventions or recommendations to one or a combination of an individual's genetic background, metabolic profile, and environmental exposures.
   d. Prevent and manage chronic diseases by tailoring dietary interventions or recommendations to one or a combination of an individual's genetic background, metabolic profile, and environmental exposures.

1.4 ICT assists food and nutrition teachers to handle a high population of student and help them receive instructions whenever they are located.
   a. True
   b. False

1.5 Nutrition professionals should be able to:
   a. Evaluate websites for clients.
   b. Determine if information presented is valid and reliable.
   c. Consider website accessibility for clients who may require accommodations for vision or hearing loss and location accessibility.
   d. All of the above.

1.6 Information stored in paper files are safe and have no risk of being damaged or lost.
   a.   True
   b.   False

1.7 The telemedicine consultation is conducted through a one-way video link-up whereby the practitioner can see the patient's image on the screen and hear his or her voice.
   a. True
   b. False

1.8 The main aim of costing in a food and beverage establishment is:
   a. To make a profit.
   b. For financial transparency.
   c. To satisfy both the customers' requirements and the financial requirements of the establishment.

1.9 A point of sale (POS) system is an essential application that can enhance decision-making, operational control, guest service and revenues.
   a. True
   b. False

1.10   The menu:
   a. Communicates a wide range of information to the customer and needs to be reflected conceptually throughout the whole restaurant.
   b. Contributes to creating a level of expectation from the customers.
   c. Is a key marketing and selling tool available to the food and beverage manager and proper attention to details is the key to making this work successfully.
   d. All of the above.

QUESTION 2   **(10 MARKS)**

2.1 Define the following terms:

a.	Information communication technology (ICT)	(3)
b.	Nutrition informatics	(3)
c.	Point of sale (POS) system	(3)
d.	Tabled 'Hote menu	(1)

SECTION B

QUESTION 3   **(10 MARKS)**

3.1 Name four (4) of the basic nutrition informatics skills required by health professionals.   (4)

3.2 Distinguish between a marketing policy, a catering policy and a financial policy in a food and beverage establishment.   (6)

QUESTION 4   **(20 MARKS)**

4.1 Name and discuss the steps in setting up a menu management system for tracking costs within a food and beverage establishment.   (8)

4.2 Name and discuss the objectives of a food and beverage control system.   (12)

SECTION C

QUESTION 5   **(11 MARKS)**

5.1. State rules related to defining a variable in SPSS.   (2)

5.2. List three windows in SPSS and describe their importance.   (6)

5.3. State Properties of the mean.   (3)

QUESTION 6   **(17 MARKS)**

6.1. Based on the following dataset, aggregate the variable Height in cm using gender as the break variable. Use the mean as aggregate function.   (4)

Gender	Height in cm	Weight in kg	Nutritional status
Male	174	96	Obesity
Male	185	110	Obesity
Female	185	110	Obesity
Female	195	104	Pre-obesity
Male	149	61	Pre-obesity
Male	189	104	Pre-obesity
Male	155	51	Normal weight
Male	191	79	Normal weight
Male	174	90	Pre-obesity
Female	169	103	Obesity

6.2. Compare and contrast a clustered bar chart with Component or sub divided bar charts. You are expected to state the pros and cons of each of the charts.   (6)

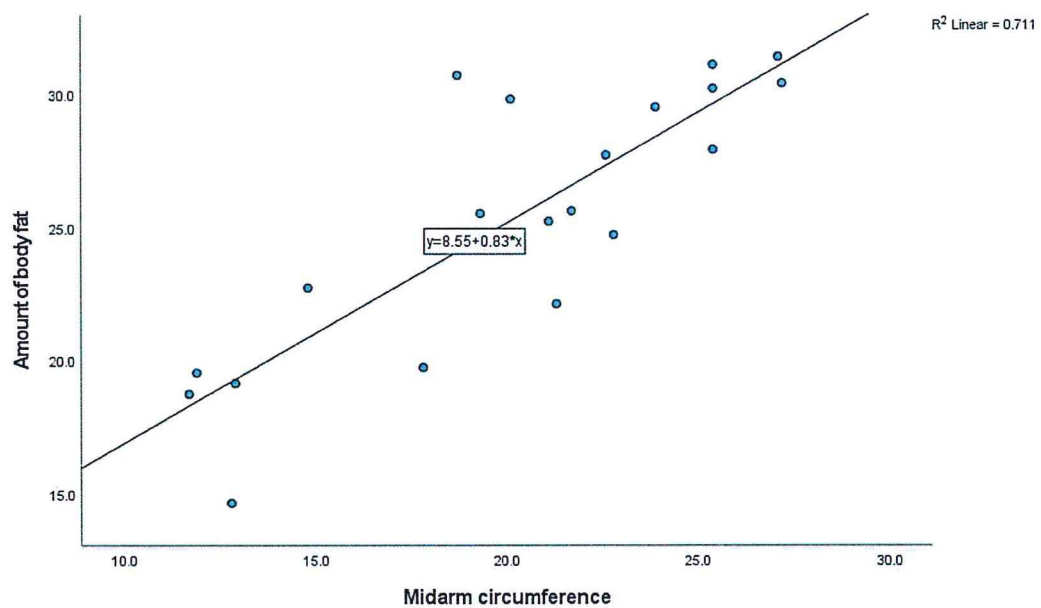6.3.   Match each histogram to the boxplot that represents the same dataset.   (4)

6.3.1	(a)
6.3.2	(b)
6.3.3	(c)
6.3.4	(d)
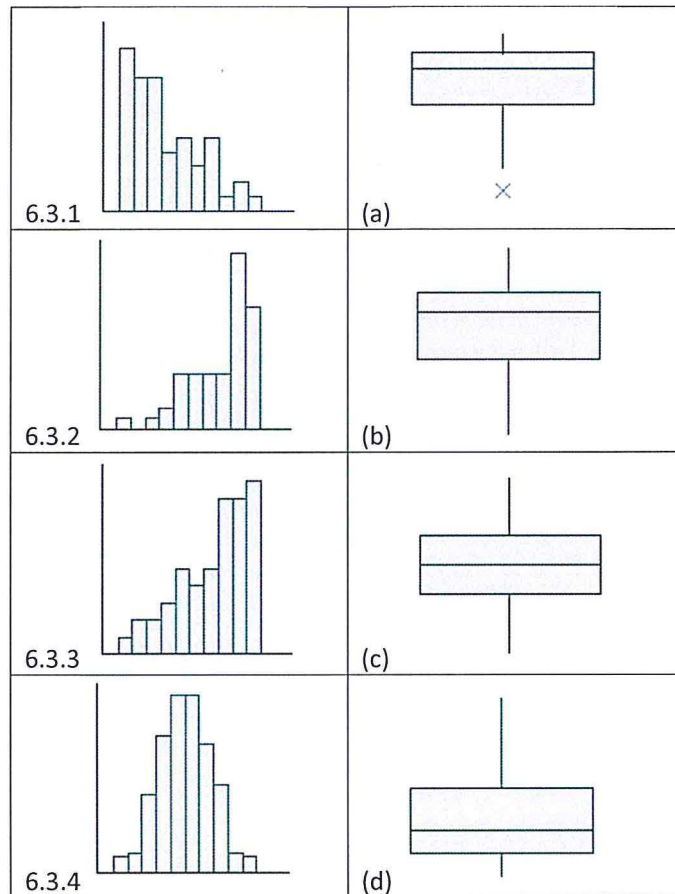
6.4. The following graph represents a scatter plot of the amount of body fat by midarm circumference.

Based on this graph, what relationship do you observe these between the two variables?   (3)

R² Linear = 0.711

Amount of body fat

$y=8.55+0.83*x$

Midarm circumference

QUESTION 7 (15 MARKS)

The following results were obtained from Demographic and Health Survey data. The results were generated using SPSS. You are expected to answer the following question based on the results provided.

7.1. The following SPSS output is regarding the association between anemic status of mothers and nutritional status of under 5 children based on stunting.

Anaemia level * Stunting categories Crosstabulation					
			Stunting categories		Total
			No Stunting	Stunting	
Anaemia level	Severe	Count	9	8	17
		Expected Count	13.5	3.5	17.0
	Moderate	Count	312	96	408
		Expected Count	323.3	84.7	408.0
	Mild	Count	275	83	358
		Expected Count	283.6	74.4	358.0
	Not anaemic	Count	514	104	618
		Expected Count	489.6	128.4	618.0
Total		Count	1110	291	1401
		Expected Count	1110.0	291.0	1401.0

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.129	3	.001
Likelihood Ratio	15.032	3	.002
Linear-by-Linear Association	11.247	1	.001
N of Valid Cases	1401		

Do these results reveal any association between anemic status of mother and nutritional status of under 5 children? Use α = 0.05. Your answer should include the following:

7.1.1. State the null and alternative hypothesis. (2)

7.1.2. The degrees of freedom. (1)

7.1.3. The test statics (calculated value). (1)

7.1.4. The rejection region based on the p-value. (1)

7.1.5. Decision and conclusion. (3)

7.2. Using the table below and at 5% level of significance, test whether the average "**Birth weight in grams**" for both male and female children are equal. You should state the null and alternative hypothesis and report the observed p-value (round to four decimal places) in your interpretation. You are also expected to comment on the test of equality of variances.

(7)

T-Test

	Independent Samples Test								
	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
Birth weight in grams	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	14.653	<0.001	0.618	1515	.289	321.613	122.837	80.663	562.562
Equal variances not assumed			0.644	1495.266	.289	321.613	122.881	80.574	562.651

QUESTION 8 (7 MARKS)

8.1. In a study to determine the relationship between Iron ($\mu mol/L$) versus Transferrin saturation (%) for pregnant women attending ANC in four regions of Namibia, Transferrin saturation y is thought to be a linear function of Iron x. Answer the following questions based on the SPSS results given below.

8.1.1. Use the fitted regression model to predict the Transferrin saturation when the iron level is 83 $\mu mol/L$. (3)

8.1.2. Test the hypothesis $H_0: \beta_1 = 0$ versus $H_1: \beta_1 \neq 0$ using $\alpha = 0.05$. What is the $p - value$? You should report the observed p-value (round to four decimal places) in your interpretation. (4)

| Coefficients[a] | | | | | | | |
| | Unstandardized Coefficients | | Standardized Coefficients | | | 95.0% Confidence Interval for B | |
Model	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
(Constant)	1.798	1.088		1.653	.099	-.342	3.937
Iron ($\mu mol/L$)	1.424	.056	.813	25.505	<0.000	1.314	1.533
a. Dependent Variable: Transferrin saturation (%)							

GOOD LUCK!