



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF HEALTH, APPLIED SCIENCES AND NATURAL RESOURCES**

**DEPARTMENT OF HEALTH SCIENCES**

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

<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	MRS MARI-LOUISE JEFFERY DR DIBABA GEMECHU
<b>MODERATOR:</b>	MR ERICK UUKULE

<b>INSTRUCTIONS</b>
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 9 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 Communication Technology has shortened distances and eroded borders in tapping a global store of knowledge.

- a. True
- b. False

1.2 Self-monitoring of diet and physical activity are commonly integrated features of smartwatches and individuals may record their dietary intake and physical activity, while establishing goals to meet in these areas, thereby receiving continuous data feedback on their behaviour.

- a. True
- b. False

1.3 Information stored in paper files are safe and have no risk of being damaged or lost.

- a. True
- b. False

1.4 A Health care professional's duties and responsibilities related to telemedicine include:

- a. Obtaining informed consent from the patient for the treatment to be given and the use of telemedicine technology.
- b. Providing a good quality service.
- c. Ensuring confidentiality, security and safety of patients' personal information.
- d. A, B and C.

1.5 In a food and beverage establishment only the departmental managers of the hotel need to be well conversant with the operating system.

- a. True
- b. False

1.6 Profit not only is earned by sales, but also can be achieved by cost control.

- a. True

b. False

1.7 A point of sale (POS) system is able to generate:

- a. A list of outstanding bills
- b. Cashier reports
- c. Sales analysis summary
- d. Labor costs
- e. All of the above

1.8 Nutritional values and allergens provided by the restaurant operator can be entered for raw ingredients to automatically generate nutritional and allergen information for recipes and menus which can be printed as a fact sheet or label or viewed on a point of sale terminal or the establishment's website.

- a. True
- b. False

1.9 To achieve excellent performance levels at a food and beverage establishment it is necessary to prevent wastage of materials caused by:

- a. Poor preparation
- b. Over-production
- c. Failure to use standard recipes
- d. All of the above

1.10 The main purpose of any business is to ensure staff satisfaction and engagement.

- a. True
- b. False

## QUESTION 2

(10 MARKS)

2.1 Define the following terms:

- a. Nutrigenomics (2)
- b. Wearable and mobile phone technologies (3)
- c. A' la Carte menu (2)
- d. Food and beverage control (3)

## SECTION B

### QUESTION 3 (10 MARKS)

- 3.1 Name the factors to be taken into consideration when selecting a computerized dietary analysis programme. (3)
- 3.2 Discuss the requirements for telemedicine consultations by health professionals. (4)
- 3.3 List the information that is typically inserted into a recipe file in the menu management system. (3)

### QUESTION 4 (20 MARKS)

- 4.1 Name and explain how information communication technology (ICT) can assist in improving food security globally. (12)
- 4.2 Name and discuss four (4) advantages of using a point of sale (POS) system. (8)

## SECTION C

### QUESTION 5 (13 MARKS)

- 5.1. Describe the uses of the following commands in SPSS:
- 5.1.1. The compute command and the advantages of IF statement within this command. (3)
  - 5.1.2. The aggregate files procedure. (3)
- 5.2. Define the following terms:
- 5.2.1. Descriptive statistics (1)
  - 5.2.2. Inferential statistics (1)
  - 5.2.3. Variable (1)
- 5.3. Classify each of the following first as qualitative or quantitative and second as nominal, ordinal, interval or ratio scale measurements. *One mark for each correct classification.* (4)
- 5.3.1. Socioeconomic status of a family when classified as low, middle and upper classes.
  - 5.3.2. Blood type of patients: A, B, AB and O.
  - 5.3.3. The number of malnourished infants in Kavango region.
  - 5.3.4. The body lengths (in inches) of 10 full-term infants at birth.

**QUESTION 6**

**(17 MARKS)**

6.1 The following summary table represents a descriptive summary of wasting among children <5 years by characteristics such as sex of a child, had dairy product, fresh foods, and region (sample result from 2013 NDHS). Answer the following question based on this table.

		Wasting Categories								Total	
		Wasted				Not wasted					
		Count	Row (%)	Column (%)	Table (%)	Count	Row (%)	Column (%)	Table (%)	Count	Column (%)
Sex of child	Male	104	(a)	66.2	5.9	772	88.1	48.0	43.7	876	49.6
	Female	53	6.0	(b)	(c)	837	(d)	52.0	47.4	890	(e)
	Total	157	8.9	100.0	8.9	1609	91.1	100.0	91.1	1766	100.0
Dairy prod	Yes	56	9.9	35.7	3.2	511	90.1	31.8	28.9	567	32.1
	No	101	8.4	64.3	5.7	1098	91.6	68.2	62.2	1199	67.9
Fresh Foods	Yes	60	12.5	38.2 (i)	3.4	419	87.5	26.0	23.7	479	27.1
	No	97	7.5	61.8	5.5	1190	92.5	74.0	67.4	1287	72.9
Region	Caprivi	14	8.0	8.9	0.8	161	92.0	10.0	9.1	175	9.9
	Erongo	4	3.6	2.5	0.2	107	96.4	6.7	6.1	111	6.3
	Hardap	14	9.8	8.9	0.8	129	90.2	8.0	7.3	143	8.1
	Karas	7	5.8	4.5	0.4	114	94.2	7.1	6.5	121	6.9
	Kavango	23	12.7	14.6	1.3	158	87.3	9.8	8.9	181	10.2
	Khomas	11	9.6 <sup>(iii)</sup>	7.0	0.6	103	90.4	6.4	5.8	114	6.5 <sup>(iii)</sup>
	Kunene	9	6.2	5.7	0.5	136	93.8	8.5	7.7	145	8.2
	Ohangwena	12	7.4	7.6	0.7	150	92.6	9.3	8.5	162	9.2
	Omaheke	17	13.3	10.8	1.0	111	86.7	6.9	6.3	128	7.2
	Omusati	12	9.0	7.6	0.7	121	91.0	7.5	6.9	133	7.5
	Oshana	12	12.9	7.6	0.7	81	87.1	5.0	4.6	93	5.3
	Oshikoto	13	9.9	8.3	0.7	118	90.1	7.3	6.7	131	7.4
Otjozondjupa	9	7.0	5.7	0.5	120	93.0	7.5	6.8	129	7.3	

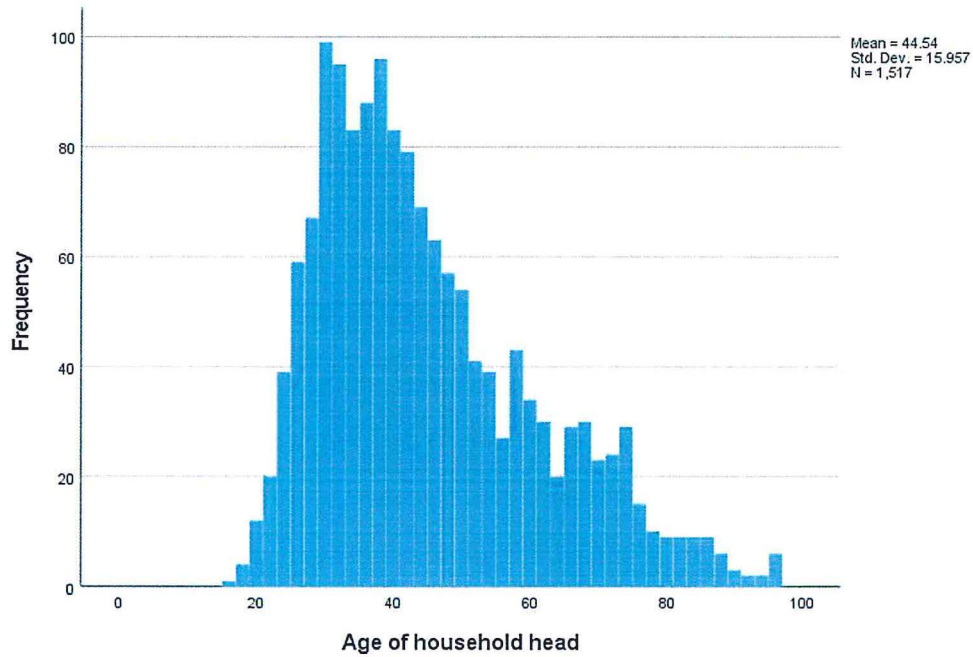
6.1.1 Fill in all the missing values (a)-(e) (5)

6.1.2 Interpret the values in cells (i), (ii) and (iii). (6)

6.2 The following graph represents a histogram for age of household head.

Comment on the age of household head based on this histogram.

(2)



6.3 Consider the dataset below and aggregate the variable Weight in kg using Nutritional status as the break variable. Use the minimum 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

**QUESTION 7****(20 MARKS)**

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

**(8)**

<b>Crosstab</b>				
Count				
		Stunting categories		Total
		Stunted	Not Stunted	
Wealth index	Poorest	108	256	364
	Poorer	92	245	337
	Middle	82	238	320
	Richer	55	266	321
	Richest	17	158	175
Total		354	1163	1517

<b>Chi-Square Tests</b>			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	37.113 <sup>a</sup>	4	<0.001
Likelihood Ratio	40.775	4	<0.001
Linear-by-Linear Association	33.256	1	<0.001
N of Valid Cases	1517		

Do these results reveal any association between wealth index of the household and nutritional status of under 5 children? Use  $\alpha = 0.05$ . Your answer should include the following:

7.1.1 State the null and alternative hypothesis (2)

7.1.2 The degree of freedom (1)

- 7.1.3 The test statics: Pearson-chi-square test statistics (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 population mean birth weight in grams is different from 2500g. You should state the null and alternative hypothesis and report the observed p-value (round to four decimal places) in your interpretation. [5]

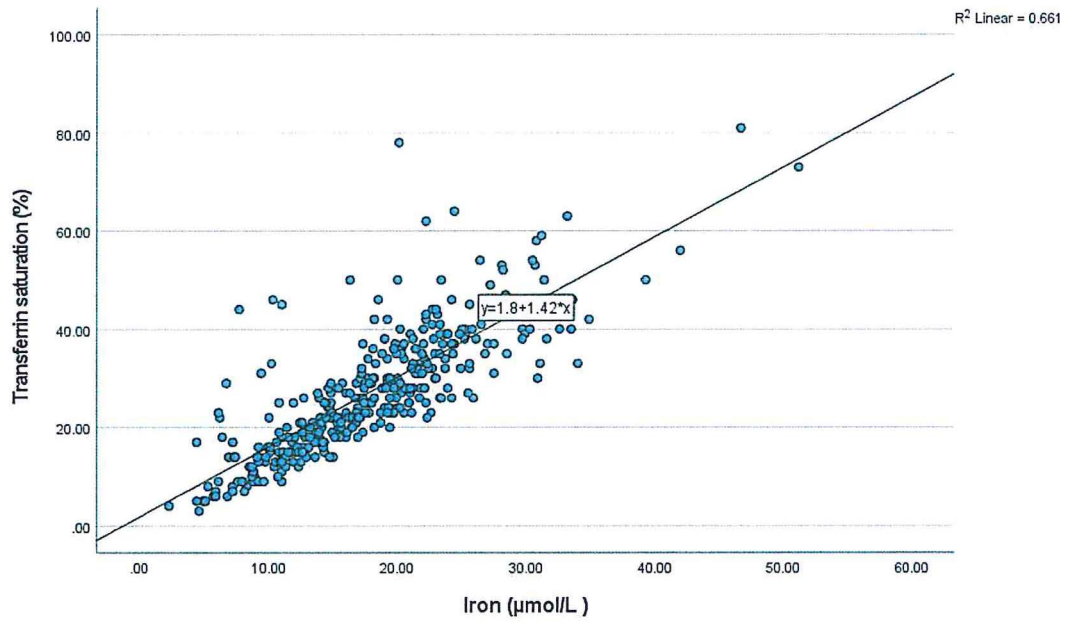
One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error
Birth weight in grams	151	4003.5	2396.781	61.537
	7	0		

One-Sample Test						
	Test Value = 2500					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Birth weight in grams	24.433	1516	<0.001	1503.505	1382.80	1624.21

7.3 In a study to determine the relationship between Iron ( $\mu\text{mol/L}$ ) 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.

- 7.3.1 What do you conclude about the relationship between the two variables based on a scatter plot produced? (2)
- 7.3.2 Test for the significance of the correlation between the two variables. You should state the null and alternative hypothesis and report the observed p-value (round to four decimal places) in your interpretation. (5)





Correlations			
		Transferrin saturation (%)	Iron (µmol/L )
Transferrin saturation (%)	Pearson Correlation	1	.813**
	Sig. (2-tailed)		<0.001
	N	336	336
Iron (µmol/L )	Pearson Correlation	.813**	1
	Sig. (2-tailed)	.000	
	N	336	336
**. Correlation is significant at the 0.01 level (2-tailed).			

GOOD LUCK!