

BOWEN UNIVERSITY, IWO
COLLEGE OF HEALTH SCIENCES
NUTRITION AND DIETETICS PROGRAM
2021/2022 SECOND SEMESTER EXAMINATION

COURSE CODE: NTD 222 COURSE TITLE: PRINCIPLES OF HUMAN NUTRITION I
CREDIT UNIT: 2 INSTUCTION: ANSWER FOUR QUESTIONS IN ALL
TIME: 2HRS

1. a. Write short note on the following
 - i. Anthropometric Indices
 - ii. Complementary feeding
 - iii. Exclusive breast feeding

6 marks
- b. State five uses of Nutritional Assessment **5 marks**
- c. Discuss the importance of nutrition 1st 1000 days in the life of a child **6.5 marks**
- 2.. a. Write in details macro nutrient deficiency **8.5 marks**
- b. Write the cut-off points for each of the following **4 marks**
 - i. Underweight
 - ii. Normal
 - iii. Overweight
 - iv. Obese
- c. Mention the challenges of adolescents **5 marks**
3. a. Mention the advantages of exclusive breastfeeding **5 marks**
- b. Why is folic acid important in pregnancy **2.5 marks**
- c. Mention steps to successful breastfeeding **10 marks**
4. a. Mention 5 factors that increases basal metabolism **2.5 marks**
- b. Explain the principles of energy balance **5 marks**
- c. A food contains 12g of carbohydrate, 5g of protein and 8 g of fat calculate the total calorie contained in the food. **10 marks**
5. a. Explain the following dietary assessment method
 - i. Food Record
 - ii. 24 hour dietary recall
 - iii. Food Frequency Questionnaire

10.5 marks
- b. Discuss the composition of human breast milk **4 marks**
- c. Highlight the factors affecting lactation **3 marks**


BOYS 0-23 months, weight-for-length

GIRLS 0-23 months, weight-for-length

Length (cm)	SAM	MAM	Normal	Overweight	Obesity
	< -3	≥ -3 to < -2	≥ -2 to ≤ +2	> +2 to ≤ +3	> +3
	Weight (kg) →				
45	0-1.8	1.9	2.0-3.0	3.1-3.3	> 3.3
46	0-1.9	2.0-2.1	2.2-3.1	3.2-3.5	> 3.5
47	0-2.0	2.1-2.2	2.3-3.3	3.4-3.7	> 3.7
48	0-2.2	2.3-2.4	2.5-3.6	3.7-3.9	> 3.9
49	0-2.3	2.4-2.5	2.6-3.8	3.9-4.2	> 4.2
50	0-2.5	2.6-2.7	2.8-4.0	4.1-4.4	> 4.4
51	0-2.6	2.7-2.9	3.0-4.2	4.3-4.7	> 4.7
52	0-2.8	2.9-3.1	3.2-4.5	4.6-5.0	> 5.0
53	0-3.0	3.1-3.3	3.4-4.8	4.9-5.3	> 5.3
54	0-3.2	3.3-3.5	3.6-5.1	5.2-5.6	> 5.6
55	0-3.5	3.6-3.7	3.8-5.4	5.5-6.0	> 6.0
56	0-3.7	3.8-4.0	4.1-5.8	5.9-6.3	> 6.3
57	0-3.9	4.0-4.2	4.3-6.1	6.2-6.7	> 6.7
58	0-4.2	4.3-4.5	4.6-6.4	6.5-7.1	> 7.1
59	0-4.4	4.5-4.7	4.8-6.8	6.9-7.4	> 7.4
60	0-4.6	4.7-5.0	5.1-7.1	7.2-7.8	> 7.8
61	0-4.8	4.9-5.2	5.3-7.4	7.5-8.1	> 8.1
62	0-5.0	5.1-5.5	5.6-7.7	7.8-8.5	> 8.5
63	0-5.2	5.3-5.7	5.8-8.0	8.1-8.8	> 8.8
64	0-5.4	5.5-5.9	6.0-8.3	8.4-9.1	> 9.1
65	0-5.6	5.7-6.1	6.2-8.6	8.7-9.4	> 9.4
66	0-5.8	5.9-6.3	6.4-8.9	9.0-9.7	> 9.7
67	0-6.0	6.1-6.5	6.6-9.2	9.3-10.0	> 10.0
68	0-6.2	6.3-6.7	6.8-9.4	9.5-10.3	> 10.3
69	0-6.4	6.5-6.9	7.0-9.7	9.8-10.6	> 10.6
70	0-6.5	6.6-7.1	7.2-10.0	10.1-10.9	> 10.9
71	0-6.7	6.8-7.3	7.4-10.2	10.3-11.2	> 11.2
72	0-6.9	7.0-7.5	7.6-10.5	10.6-11.5	> 11.5
73	0-7.1	7.2-7.6	7.7-10.8	10.9-11.8	> 11.8
74	0-7.3	7.3-7.8	7.9-11.0	11.1-12.1	> 12.1
75	0-7.4	7.5-8.0	8.1-11.3	11.4-12.3	> 12.3
76	0-7.5	7.6-8.2	8.3-11.5	11.6-12.6	> 12.6
77	0-7.7	7.8-8.3	8.4-11.7	11.8-12.8	> 12.8
78	0-7.8	7.9-8.5	8.6-12.0	12.1-13.1	> 13.1
79	0-8.0	8.1-8.6	8.7-12.2	12.3-13.3	> 13.3
80	0-8.1	8.2-8.8	8.9-12.4	12.5-13.6	> 13.6
81	0-8.3	8.4-9.0	9.1-12.6	12.7-13.8	> 13.8
82	0-8.4	8.5-9.1	9.2-12.8	12.9-14.0	> 14.0
83	0-8.6	8.7-9.3	9.4-13.1	13.2-14.3	> 14.3
84	0-8.8	8.9-9.5	9.6-13.3	13.4-14.6	> 14.6
85	0-9.0	9.1-9.7	9.8-13.6	13.7-14.9	> 14.9
86	0-9.2	9.3-9.9	10.0-13.9	14.0-15.2	> 15.2


Length (cm)	SAM	MAM	Normal	Overweight	Obesity
	< -3	≥ -3 to < -2	≥ -2 to ≤ +2	> +2 to ≤ +3	> +3
	Weight (kg) →				
45	0-1.8	1.9-2.0	2.1-3.0	3.1-3.3	> 3.3
46	0-1.9	2.0-2.1	2.2-3.2	3.3-3.5	> 3.5
47	0-2.1	2.2-2.3	2.4-3.4	3.5-3.7	> 3.7
48	0-2.2	2.3-2.4	2.5-3.6	3.7-4.0	> 4.0
49	0-2.3	2.4-2.5	2.6-3.8	3.9-4.2	> 4.2
50	0-2.5	2.6-2.7	2.8-4.0	4.1-4.5	> 4.5
51	0-2.7	2.8-2.9	3.0-4.3	4.4-4.8	> 4.8
52	0-2.8	2.9-3.1	3.2-4.6	4.7-5.1	> 5.1
53	0-3.0	3.1-3.3	3.4-4.9	5.0-5.4	> 5.4
54	0-3.2	3.3-3.5	3.6-5.2	5.3-5.7	> 5.7
55	0-3.4	3.5-3.7	3.8-5.5	5.6-6.1	> 6.1
56	0-3.6	3.7-3.9	4.0-5.8	5.9-6.4	> 6.4
57	0-3.8	3.9-4.2	4.3-6.1	6.2-6.8	> 6.8
58	0-4.0	4.1-4.4	4.5-6.5	6.6-7.1	> 7.1
59	0-4.2	4.3-4.6	4.7-6.8	6.9-7.5	> 7.5
60	0-4.4	4.5-4.8	4.9-7.1	7.2-7.8	> 7.8
61	0-4.6	4.7-5.0	5.1-7.4	7.5-8.2	> 8.2
62	0-4.8	4.9-5.2	5.3-7.7	7.8-8.5	> 8.5
63	0-5.0	5.1-5.4	5.5-8.0	8.1-8.8	> 8.8
64	0-5.2	5.3-5.6	5.7-8.3	8.4-9.1	> 9.1
65	0-5.4	5.5-5.8	5.9-8.6	8.7-9.5	> 9.5
66	0-5.5	5.6-6.0	6.1-8.8	8.9-9.8	> 9.8
67	0-5.7	5.8-6.2	6.3-9.1	9.2-10.0	> 10.0
68	0-5.9	6.0-6.4	6.5-9.4	9.5-10.3	> 10.3
69	0-6.0	6.1-6.6	6.7-9.6	9.7-10.6	> 10.6
70	0-6.2	6.3-6.8	6.9-9.9	10.0-10.9	> 10.9
71	0-6.4	6.5-6.9	7.0-10.1	10.2-11.1	> 11.1
72	0-6.5	6.6-7.1	7.2-10.3	10.4-11.4	> 11.4
73	0-6.7	6.8-7.3	7.4-10.6	10.7-11.7	> 11.7
74	0-6.8	6.9-7.4	7.5-10.8	10.9-11.9	> 11.9
75	0-7.0	7.1-7.6	7.7-11.0	11.1-12.2	> 12.2
76	0-7.1	7.2-7.7	7.8-11.2	11.3-12.4	> 12.4
77	0-7.3	7.4-7.9	8.0-11.5	11.6-12.6	> 12.6
78	0-7.4	7.5-8.1	8.2-11.7	11.8-12.9	> 12.9
79	0-7.6	7.7-8.2	8.3-11.9	12.0-13.1	> 13.1
80	0-7.7	7.8-8.4	8.5-12.1	12.2-13.4	> 13.4
81	0-7.9	8.0-8.6	8.7-12.4	12.5-13.7	> 13.7
82	0-8.0	8.1-8.7	8.8-12.6	12.7-13.9	> 13.9
83	0-8.2	8.3-8.9	9.0-12.9	13.0-14.2	> 14.2
84	0-8.3	8.5-9.1	9.2-13.2	13.3-14.5	> 14.5
85	0-8.5	8.7-9.3	9.4-13.5	13.6-14.9	> 14.9
86	0-8.6	8.9-9.6	9.7-13.8	13.9-15.2	> 15.2

Simplified field tables

Length-for-age GIRLS Birth to 2 years (z-scores)		 World Health Organization						
Year: Month	Months	-3 SD	-2 SD	-1 SD	Median	1 SD	2 SD	3 SD
0: 0	0	43.6		47.3	49.1	51.0		54.7
0: 1	1	47.8		51.7	53.7	55.6		59.5
0: 2	2	51.0		55.0	57.1	59.1		63.2
0: 3	3	53.5		57.7	59.8	61.9		66.1
0: 4	4	55.6		59.9	62.1	64.3		68.6
0: 5	5	57.4		61.8	64.0	66.2		70.7
0: 6	6	58.9		63.5	65.7	68.0		72.5
0: 7	7	60.3		65.0	67.3	69.6		74.2
0: 8	8	61.7		66.4	68.7	71.1		75.8
0: 9	9	62.9		67.7	70.1	72.6		77.4
0:10	10	64.1		69.0	71.5	73.9		78.9
0:11	11	65.2		70.3	72.8	75.3		80.3
1: 0	12	66.3		71.4	74.0	76.6		81.7
1: 1	13	67.3		72.6	75.3	77.8		83.1
1: 2	14	68.3		73.7	76.4	79.1		84.4
1: 3	15	69.3		74.8	77.5	80.2		85.7
1: 4	16	70.2		75.8	78.5	81.4		87.0
1: 5	17	71.1		76.8	79.7	82.5		88.2
1: 6	18	72.0		77.8	80.7	83.6		89.4
1: 7	19	72.8		78.8	81.7	84.7		90.6
1: 8	20	73.7		79.7	82.7	85.7		91.7
1: 9	21	74.5		80.6	83.7	86.7		92.9
1:10	22	75.2		81.5	84.6	87.7		94.0
1:11	23	76.0		82.3	85.5	88.7	91.9	95.0
2: 0	24	76.7		83.2	86.4	89.6	92.9	96.1

WHO Child Growth Standards

Simplified field tables

Weight-for-age GIRLS Birth to 5 years (z-scores)		 World Health Organization						
Year: Month	Months	-3 SD	-2 SD	-1 SD	Median	1 SD	2 SD	3 SD
0: 0	0	2.0		2.8	3.2	3.7	4.3	4.8
0: 1	1	2.7		3.6	4.2	4.8	5.5	6.2
0: 2	2	3.4		4.5	5.1	5.8	6.6	7.5
0: 3	3	4.0		5.2	5.9	6.6	7.5	8.5
0: 4	4	4.4		5.7	6.4	7.3	8.3	9.3
0: 5	5	4.8		6.1	6.9	7.8	8.9	10.0
0: 6	6	5.1		6.5	7.3	8.2	9.4	10.6
0: 7	7	5.3		6.8	7.6	8.6	9.8	11.1
0: 8	8	5.6		7.0	7.9	9.0	10.2	11.6
0: 9	9	5.8		7.3	8.2	9.3	10.5	12.0
0:10	10	5.9		7.5	8.4	9.6	10.8	12.4
0:11	11	6.1		7.7	8.7	9.9	11.1	12.8
1: 0	12	6.3		7.9	8.9	10.1	11.3	13.1
1: 1	13	6.4		8.1	9.1	10.4	11.6	13.5
1: 2	14	6.6		8.3	9.3	10.6	11.8	13.8
1: 3	15	6.7		8.5	9.5	10.9	12.1	14.1
1: 4	16	6.9		8.7	9.7	11.1	12.3	14.5
1: 5	17	7.0		8.9	9.9	11.4	12.5	14.8
1: 6	18	7.2		9.1	10.1	11.6	12.7	15.1
1: 7	19	7.3		9.2	10.2	11.8	12.8	15.4
1: 8	20	7.5		9.4	10.4	12.1	13.0	15.7
1: 9	21	7.6		9.5	10.5	12.3	13.1	16.0
1:10	22	7.8		9.8	10.7	12.5	13.2	16.4
1:11	23	7.9		10.0	10.9	12.8	13.3	16.7
2: 0	24	8.1		10.2	11.1	13.0	13.4	17.0
2: 1	25	8.2		10.3	11.2	13.3	13.5	17.3
2: 2	26	8.4		10.5	11.4	13.5	13.6	17.7
2: 3	27	8.5		10.7	11.5	13.7	13.7	18.0
2: 4	28	8.6		10.9	11.6	14.0	13.8	18.3
2: 5	29	8.8		11.1	11.8	14.2	13.9	18.7