

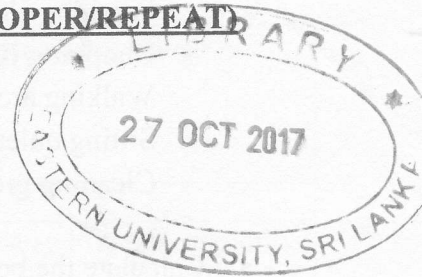
EASTERN UNIVERSITY, SRI LANKA

THIRD YEAR, FIRST SEMESTER EXAMINATION IN AGRICULTURE -2014/2015

AC 3102- HUMAN NUTRITION (2 :20/20)

END SEMESTER EXAMINATION (JAN/FEB: 2017 -PROPER/REPEAT)

PRACTICAL EXAMINATION



**Time Allowed: 02 Hours**

**Answer all questions**

- 1) Mr. Ravi is a Management Assistant who is working in the building department. He is a large frame with 81kg weight and 5' 4" tall.
  - a) What is his ideal body weight range?
  - b) Calculate his percent ideal body weight (%IBW).
  - c) Calculate his body mass index(BMI).
  - d) Comment on his present nutritional status in relation to BMI and suggest the plans to overcome it.
  
- 2) Mrs. Sriyani is a 49 years old lady, who is 1.58m of height and 59 kg of weight. she is having 3 sons. Sriyani usually prepare food for breakfast and lunch, and buy takeaways for dinner. Her average physical activity factor is 1.7.
  - a) Comment on Sriyani's body weight.
  - b) Calculate her Basal Metabolic Rate (BMR).
  - c) Calculate the Sriyani's Total Daily Energy Expenditure (TDEE/TEE) in kcal/day.
  - d) Prepare a diet plan for her TEE.
  
- 3) A researcher plan to assess the average physical activity factor of a male by using his physical activity diary. Summary of the physical activities of a 37 years old male, his weight is 71kg and height is 168.3cm is given below.
  - Sleeping for 6hrs (met- 1)
  - Carpentry work for 8 hrs (met-3.5)
  - Milking cows by hand for 2 hrs (met -2.5)

- Driving fir 2 hrs (met-1.4)
- Playing cards for 1hr (met -1.4)
- Washing clothes for 0.5 hr (met -2.2)
- Chopping fire woods for 1hr (met -4.1)
- Walking around for 1 hr (met- 2.4)
- Sitting quietly for 1.5 hrs (met 1.2)
- Cleaning ground for 1 hr (met 3.8)

- a) Calculate the body mass index BMI) of the above man.
- b) Calculate his Basal Metabolic Rate BMR).
- c) Calculate the total energy expenditure in kcal/kg/hr.
- d) Calculate the average physical activity factor and comment the result.

4) a) Distinguish the term “Junk Food” from “Nutritious Food”.

b) The energy and other nutrients content of a standard piece of a food item is given below. Using the given data find out whether it is a junk food or a nutritious food.

Nutrient	Quantity (per 100g)	RDA
Energy(kcal)	512	2500
Protein (g)	23.43	55
Vit A(μg)	646	750
Vit D(μg)	12.53	2.5
Vit C (mg)	11.67	40
Vit B1(mg)	0.16	0.6
Vit B2(mg)	1.44	1.8
Vit B6(mg)	0.2	2
Vit B12(μg)	2.45	1
Ca(mg)	888.67	800
P(mg)	759	550
Mg(mg)	76.13	49
Folic acid(μg)	2.62	200

### Energy Expenditure ( Harris- Benedict equation)

**Male** -  $BMR = 66.5 + 13.7x \text{ wt (kg)} + 5.0x \text{ ht (cm)} - 6.75x \text{ age (yr)}$

**Female** -  $BMR = 655.1 + 9.5x \text{ wt (kg)} + 1.85x \text{ ht (cm)} - 4.67x \text{ age (yr)}$

## Food Exchange Groups

Food Group	Unit of exchange	Composition				Characteristic item
		Carbo. (g)	Protein (g)	Fat (g)	Energy Kcal	
<b>Milk</b>	01 cup					
Skim		12	08	-	90	Skim or very low fat/ 3tsp milk powder
Low Fat		12	08	05	120	
Whole		12	08	08	150	
<b>Vegetables</b>	½ cup	05	02	-	25	Medium carbohydrate
<b>Fruit</b>	Varies	15	-	-	60	Portion size varies with carbohydrate value of item
<b>Bread</b>	Varies; 01 slice ( 30 g)	15	03	-	80	Variety of starch items, bread, cereals, vegetables; portions equal in carbohydrate value to 01 slice of bread.
<b>Meat</b>	28 g ( 01 oz)					Exchange units equal to protein value of 28 g lean meat.
Lean		-	07	03	55	
Medium Fat		-	07	05	75	
Higher Fat		-	07	08	100	
<b>Fat</b>	01 tsp					01 tsp margarine ( oil, olives, mayonnaise, avocados)
Poly Unsat.		-	-	05	45	
Mono Unsat.		-	-	05	45	
Saturated		-	-	05	45	

(P.T.O)