**NAME: EZE HANNAH NKECHI**

**MATRIC NO: 18/MHS08/004**

**DEPT: PUBLIC HEALTH (M.H.S)**

**COURSE CODE: BCH242**

**COURSE TITLE: INTRODUCTION TO CELL BIOCHEMISTRY II**

**ASSIGNMENT TITLE: NUTRITION**

1. Write on the factors affecting basal metabolic rate.
2. What do you understand by protein energy malnutrition
3. Distinguish between marasmus and kwashiorkor

QUESTION NO 1:

Basal metabolic rate is the rate of energy expenditure per unit time by endothermic animals at rest. It is the number of calories required to keep the body functioning at rest.

Ten factors that can affect basal metabolic rate are;

1. Age: One’s basal metabolic rate generally slows as they get older. This is due to a loss of muscle tissue and changes to hormonal and neurological processes. During development, children go through periods of growth with extreme rates of metabolism.
2. Muscle mass: Muscles require more energy to function than fat. Therefore, the more muscles the body carries, the more energy the body needs to exist.
3. Gender: The basal metabolic rate averages 5 to 10 percent lower in women than in men.
4. Genetics: Some families have faster basal metabolic rate than others with some genetic disorders also affecting metabolism.
5. Body size: People with bigger bodies have a larger basal metabolic rate because they have larger organs and fluid volume to maintain.
6. Drugs: Caffeine and nicotine can increase your basal metabolic rate whilst medications such as antidepressants and steroids increase weight gain regardless of what you eat.
7. Physical activity: Exercise increases muscles mass and powers up the metabolic engines burning kilojoules at a faster rate, even when at rest.
8. Hormonal factors: Hormonal imbalances such as hypothyroidism and hyperthyroidism can affect your metabolism.
9. Environmental factors: Environmental changes such as increased heat or cold forces the body to work harder to maintain its normal temperature and increases basal metabolic rate.
10. Diet: Food changes metabolism. The kind of food and how it you eat has a big influence on your basal metabolic rate.

QUESTION NO 2.

Protein-energy malnutrition (PEM) is also known as protein-energy undernutrition (PEU). This is a form of malnutrition that is defined as a range of pathological conditions arising from coincident lack of dietary protein and/or energy in varying proportions. The condition has mild, moderate and severe degrees.

QUESTION NO 3:

Differences between marasmus and kwashiorkor

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| **Characteristic**s | **Kwashiorkor** | **Marasmus** |
| Expected percentage weight for age | 60-80% | Less than 60% |
| Weight for height | Normally or slightly decreased | Remarkably decreased |
| Edema | Present | Absent |
| Mood | Irritable when pick up  Apathetic when left alone | Child is alert and irritable |
| Appetite | Poor appetite | Good appetite |