



## Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD (now MoE)

Re-accredited with 'A++' Grade by NAAC. CGPA 3.65/4, Category I by UGC

Coimbatore - 641 043, Tamil Nadu, India

Continuous Internal Assessment – II, April 2025

IV Semester

Class : II PG

Major: Food Science and Nutrition

Time: 2 hours

Max. Marks: 60

### 23MFNC21- Advances in Nutrition – II

#### Course Objectives:

CO1: Gain insight into the physiological and biochemical role of Vitamins, Minerals.

CO2: Outline the role of ultra trace minerals in nutrition.

CO3: Understand the interrelationship of micronutrients.

CO4: Explore the bio availability and deficiency of micronutrients

CO5: Enlighten on the significance of gut microbiome in nutrition and health.

#### Part A

##### Choose the correct answer

6x1=6

1. Hyperkalaemia will lead to CO3K1
  - a. Low blood pressure
  - b. Irregular heartbeats and cardiac arrest
  - c. Dehydration
  - d. Weak bones
2. The organ which plays a major role in regulating sodium levels in the body is CO3K1
  - a. Liver
  - b. Kidney
  - c. Stomach
  - d. Lungs
3. The Human Microbiome Project was officially launched in CO5K1
  - a. 1990
  - b. 2001
  - c. 2007
  - d. 2015
4. Copper plays a key role in CO4K1
  - a. Bone mineralization
  - b. Iron metabolism
  - c. Blood clotting
  - d. Thyroid hormone production
5. Iron absorption is enhanced by CO3K1
  - a. Calcium
  - b. Phytic acid
  - c. Vitamin C
  - d. Tannins
6. Dysbiosis refers to CO5K1
  - a. A balanced gut microbiota
  - b. An imbalance in gut microbiota
  - c. The presence of harmful bacteria in food
  - d. The process of digestion

**Part B**

**3x6=18**

**Answer ALL questions**

**The answer should not exceed 400 words or two pages**

7. a. Explain the process of iron absorption, transport, and utilization. What factors enhance or inhibit its absorption? CO3K2  
(or)
7. b. Explain the functions and dietary sources of selenium. How does selenium act as an antioxidant in the body? CO3K2
8. a. Explain the major physiological roles of sodium in the human body. CO3K3  
(or)
8. b. Discuss the key functions of potassium in maintaining electrolyte balance. CO3K2
9. a. Explain the role of fluoride in dental and bone health. How does fluoride deficiency and excess impact human health? CO4K2  
(or)
9. b. Evaluate the potential of microbiome-based therapies in treating gastrointestinal disorders. CO5K2

**Part C**

**3x12 = 36**

**Answer ALL questions**

**The answer should not exceed 800 words or four pages**

- 10.a. Explain iron deficiency anaemia in detail. CO3K3  
(or)
- 10.b. Describe the functions and deficiency of zinc? CO3K3
- 11.a. Discuss the therapeutic applications of ultra trace minerals and their role in disease prevention. How can their supplementation support specific health conditions? CO4K3  
(or)
- 11.b. Discuss the functions and deficiency conditions of zinc CO3K3
12. a. Describe the key functions of the gut microbiota in digestion and metabolism. CO5K3  
(or)
12. b. Discuss the implications of the Human Microbiome Project for personalized nutrition and disease prevention. CO5K3