

**MASTER OF SCIENCE (DIETETICS AND  
FOOD SERVICE MANAGEMENT)**

**Term-End Examination**

**June, 2007**

**MFN-004 : ADVANCE NUTRITION**

*Time : 3 hours*

*Maximum Marks : 100*

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**Note :** Attempt **five** questions in all. Question No. 1 is **compulsory**. All questions carry equal marks.

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1. (a) Explain the following in 2 – 3 sentences only : 10
- (i) Probiotics
  - (ii) Safe requirements
  - (iii) 2 compartment model
  - (iv) Altitude sickness
  - (v) Gene expression
- (b) Give the national and the FAO/WHO recommendations for : 10
- (i) Vitamin A requirement (retinol equivalent) for a 4 – 6 year old child

- (ii) Thiamin requirement for adult sedentary man
  - (iii) Vitamin C intake of adult women
  - (iv) Iron intake of 16 – 18 year old adolescent girl  
(for 5% iron bioavailability)
  - (v) Calcium intake of pregnant woman
- 2.** (a) Briefly discuss the energy requirement for adult man and woman as given by ICMR and FAO/WHO/UNU. 10
- (b) Describe the properties and effects of dietary fibre in human nutrition. 5+5
- 3.** Explain the following statements, giving examples : 5+5+5+5
- (i) Age, sex, body weight affect nutrient requirements.
  - (ii) The dietary reference intakes (DRI) are a set of four nutrient-based reference values.
  - (iii) Absorption of glucose into the mucosal cells is by active transport.
  - (iv) Nutrient balance studies for determining nutrient requirements.
- 4.** (a) Present a critical analysis on the protein quality of Indian diets. Also enumerate the measures you may adopt to improve the quality of protein in your diet. 5+5
- (b) Explain the following and their role in human nutrition : 10

- (i) Saturated and unsaturated fatty acids
- (ii) Short chain, medium chain and long chain fatty acids
- (iii) Essential fatty acids
- (iv) Trans fatty acids

5. Explain the following, giving appropriate examples :

5+5+5+5

- (i) Retinol and carotenoids have different vitamin A activity
- (ii) Factors affecting calcium absorption
- (iii) Role of folate in DNA biosynthesis and methylation cycle
- (iv) Absorption of zinc depends on the composition of the diet

6. (a) What is the aim of menu planning ? 5

(b) Briefly describe the effects of maternal undernutrition on lactation performance and quality of milk. 8

(c) Highlight the major difference between the national and international energy recommendations for infants and preschoolers. 7

7. (a) What indicators would you use to assess the iron status of population groups ? Comment. 6

(b) "Iodine and selenium content of foods is highly variable." Comment on the statement, highlighting the factors which influence the content of these nutrients in the diet. 7

- (c) What are polyphenols ? Briefly discuss their health benefits. 7

**8.** Write short notes on any **four** of the following : 5+5+5+5

- (i) Guidelines for the management of population groups during emergency/natural disaster.
- (ii) Types of food in the space food system.
- (iii) Common nutritional problems of older children and adolescents.
- (iv) Nutrient requirements of the elderly.
- (v) Health benefits of other dietary factors with anti-nutritional effects.