

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

**Term-End Examination**

**December, 2012**

**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) Define the following : 10
- (i) NDP cal %
  - (ii) Essential fatty acid
  - (iii) Probiotic
  - (iv) Ergogenic Aids
  - (v) Gene expression

- (b) Match the item in Column A with the items in the Column B. 10

| Column A                       | Column B  |
|--------------------------------|---|
| (a) Recommended Dietary Intake | (i) Iron stores   |
| (b) Physical activity level    | (ii) Protein quality  |
| (c) Overweight                 | (iii) Thyroxine   |
| (d) Resistant starch           | (iv) TEE/BMR  |
| (e) Mutual supplementation     | (v) Estimated average intake + 2 SD                                       |
| (f) Trans fatty acid           | (vi) Wilson disease   |
| (g) Beta-carotene              | (vii) Low glycemic index value  |
| (h) Vitamin E                  | (viii) BMI for age $\geq 85^{\text{th}}$ to $< 95^{\text{th}}$ percentile |
| (I) Folic acid                 | (ix) Hydrogenation  |
| (j) Serum Ferritin             | (x) Tocopherol  |
|                                | (xi) Provitamin A   |
|                                | (xii) Methylation cycle   |

2. (a) Briefly explain the various components of energy expenditure. 8
- (b) Present the WHO classification you will use to assess the weight status of (i) adults and (ii) children. 3+3
- (c) List the two conditions arising due to energy imbalance. What are the consequences of these conditions? 2+4

3. (a) Enumerate the functions performed by the following nutrients in our body : 5+5
- (i) Carbohydrate
  - (ii) Vitamin D
- (b) Comment on the quality of protein in the cereal-based Indian diets. What measures would you adopt to improve protein quality ? 4+6
4. Explain the following briefly : 5+5+5+5
- (a) Major fluid compartments of the body.
  - (b) Role of vitamin E in protection of polyunsaturated fatty acids from oxidative damage.
  - (c) Factors that affect the bioavailability of calcium in our body.
  - (d) Coenzyme activity of nicotinic acid.
5. (a) Define and classify functional foods. 2+4
- (b) Enumerate the health benefits of 4+4
- (i) polyphenols, and
  - (ii) phytoestrogens.
- (c) Briefly explain the role of selenium in protection from oxidative damage. 6
6. (a) Comment on the energy, protein, iron and calcium requirement for a pregnant and for a lactating woman with a four months old baby. (Give the recommended dietary intakes for the two individuals). 4+4

- (b) Explain the features/changes which influence the nutrient needs of adolescent. Which nutrients would you emphasize in the diet of a adolescent and why ? 5+2
- (c) Why does the energy requirement decrease with an increase in age ? Explain with an example. 5
7. (a) Briefly explain the role of ergogenic aids in sports performance. Justify your answer with appropriate examples. 7
- (b) Present a brief account on the nutritional requirements in high altitude. 6
- (c) Comment on the nutritional requirement for space mission. 7
8. Write short notes on *any four* of the following : 5+5+5+5
- (a) Techniques for measuring body composition.
- (b) Guidelines for feeding 6 - 12 months infant
- (c) Weight gain during pregnancy and foetal outcome
- (d) Role of vitamin A in vision
- (e) Nutritional problems of preschoolers
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