CENTRAL UNIVERSITY OF HARYANA

Term End Examinations July 2023

Programme: M.Sc in Nutrition Biology **Session: 2022-23**

Semester: 2nd **Max. Time: 3 Hours**

Course Title: Nutritional Biochemistry-II **Max. Marks: 70**

Course Code: SIAS NB 1 2 06 C 4004

Instructions:

1. Question no. 1 has seven parts and students are required to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and student are required to answer any two parts of each question. Each part carries seven marks.

Q 1. (4X3.5=14)

a) Write any three major functions of water in the body.

b) What is electrolyte? Write any three major electrolytes along with its role in the body

c) Write any two sources and functions of Vitamin B complex.

d) Define vitamins and write any one major function of each fat-soluble vitamins.

e) Differentiate between paracrine and autocrine mode of hormonal regulation.

f) Briefly discuss with an example about the structural feature of a molecule due to which it is able to reduce nutrient availability.

g) Excess of fluoride makes bone weak. Why? Briefly explain the underlying mechanism.

Q 2. (2X7=14)

a) Classify total body water/fluid into different compartments along with its composition. Briefly write about water losses, sources, and its absorption in the body.

b) Briefly describe along with diagram the effect of hormone on water and sodium balance.

c) Briefly discuss any three factors regulating potassium and acid base balance in the body.

Q3. (2X7=14)

a) Write about sources, digestion, absorption, transport, storage, metabolism, and excretion of any two water soluble vitamins.

b) Discuss the metabolism, excretion, deficiency, and toxicity concerns of fat-soluble vitamins.

c) Discuss the functions and chemistry (Interaction with other nutrients) of fat-soluble vitamins.

Q 4. (2X7=14)

a) Discuss in detail the role of PTH, Vitamin D and Kidney in regulation of blood Calcium level?
b) Elaborate on transport, uptake and storage of iron in the human body.
c) Discuss Selenium with reference to its role in antioxidant defense systems. Also add a brief note on its metabolism.

Q 5. (2X7=14)

a) Enumerate any five hormones released by the Hypothalamus gland with reference to their chemical nature and functions.
b) Enumerate any five hormones released by the Pituitary gland with reference to their chemical nature and functions.
c) Elaborate on the role of various types of cell membrane receptors with reference to the effect of hormones on cell signaling pathways.

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Term End Examinations, June-July, 2023

Programme: MSc Nutrition Biology **Session: 2022-23**

Semester: 2nd **Max. Time: 3 Hours**

Course Title: Functional Foods and Nutraceuticals **Max. Marks: 70**

Course Code: SIAS NB 1 2 07 C 4004

Instructions:

1. Question no. 1 has seven sub parts and students need to answer any four. Each sub part carries three and half Marks.

2. Question no. 2 to 5 have three sub parts and students need to answer any two sub parts of each question. Each sub part carries seven marks.

Question No1. Briefly define the followings **(4X3.5=14)**

a. Dietary supplements

b. Fortified foods

c. Gut microbiota

d. Dietary Fibre

e. Recombinant probiotics

f. Bio-active proteins and peptides

g. FOSHU

Question No.2 **(2X7=14)**

a. What do you mean by nutraceuticals? Write down the detailed classification of nutraceuticals.

b. Discuss in detail about the various method of extraction and isolation of nutraceuticals.

c. Write down a detailed note on scope and relevance of functional foods.

Question No.3 **(2X7=14)**

a. Write a detailed note on nanotechnology applications in functional food.

b. Discuss the cellular and molecular mechanisms of action of nutraceuticals relative to their bioavailability.

c. How functional foods and nutraceuticals are helpful in the prevention of chronic diseases?

Question No.4 **(2X7=14)**

a. Explain the important features of probiotics along with their health beneficial potential and mechanism of action.

b. Differentiate between probiotics and prebiotics. Also discuss the importance of prebiotics in functional foods.

c. What do you mean by synbiotics? Describe the important features of synbiotics along with their effects on human health.

Question No.5 **(2x7=14)**

a. Write a detailed note on ICMR-DBT guidelines for evaluation of probiotics.

b. Explain about the Indian regulations for nutraceuticals/functional foods.

c. Briefly discuss about the various important regulatory authorities/bodies monitoring functional foods and nutraceuticals. Also describe the quality assurance and safety of probiotic products.

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Second Semester Term End Examinations July 2023

Programme: MSc, Nutrition Biology **Session: 2023**

Semester: II **Max. Time: 3 Hours**

Course Title: Nutritional Toxicology **Max. Marks: 70**

Course Code: SIAL NB 1 2 01 DCEC 4004

Instructions:

1. Question no. 1 has seven parts and students are required to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and students are required to answer any two parts of each question. Each part carries seven marks.

Q 1. (4X3.5=14)

a) Differentiate between food borne illnesses and food intoxication with examples.
b) Draw a schematic representation of classification of toxicants.
c) Write about the mode of action of microbial toxins.
d) What are NOTS? Explain briefly.
e) What do you mean by direct and indirect food additives? Write any two differentiating points between them.
f) Mention any two toxic effects of dietary supplements.
g) What do you mean by GRAS (Explain with an example).

Q 2. (2X7=14)

a) Describe the overview of methods of toxicity testing.
b) Explain the mechanisms of toxicants at molecular level.
c) Write a note on risk analysis & the steps involved in risk assessment.

Q3. (2X7=14)

a) What are antinutritional substances? Describe in detail.
b) Briefly describe the types, sources & potential toxic effects of different hazards.
a) Give an account of food allergies and intolerances.

Q 4. (2X7=14)

a) What is meant by toxicity of Vitamins & minerals? Explain with examples.
b) What are the adverse health effects caused due to different additives? Explain with suitable examples.

c) What is JECFA? Explain its role in detailed.

Q 5. (2X7=14)

a) Give a note on ISO and CODEX Alimentarius Commission.

b) What do you mean by process induced toxic compounds? Explain with suitable examples.

c) Describe the toxic components in foods of marine origin.

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Second Semester Term End Examinations June/July 2023

Programme: M.Sc. Nutrition Biology **Session: 2022-23**

Semester: II **Max. Time: 3 Hours**

Course Title: Food Microbiology and Food Safety **Max. Marks: 70**

Course Code: SIAS NB 1 2 08 C 4004

Instructions:

1. Question no. 1 has seven parts and students are required to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and student are required to answer any two parts of each question. Each part carries seven marks.

Q 1. Write a brief note on (any four): (4X3.5=14)

a) Biopreservation

b) Probiotics and health benefits

c) Canning

d) Food Safety

e) Blanching

f) Standard Plate Counts

g) Pure cultures

Q 2. Discuss in detail (2X7=14)

a) Preservation of food by physical methods

b) Microbiological Risk Assessment (MRA)

c) Indicators of microbiological quality of food

Q3. (2X7=14)

a) Describe in detail the laboratory testing procedures for foodborne outbreaks.

b) Enlist the importance of starter cultures food industries.

c) What do you mean by food irradiation? Explain in brief.

Q 4. Differentiate between (2X7=14)

a) Thermal and Non-thermal food processing methods

b) Spontaneous and Selective food fermentation

c) Hygiene and Sanitation

Q 5. (2X7=14)

a) Describe the general principles of food preservation.

b) Explain causes of spoilage of foods with examples.

c) Write a note on hurdle technology and its application in food preservation.

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Second Semester Term End Examinations May July 2023

Programme: M.Sc. Nutrition Biology **Session: 2022-23**

Semester: IInd **Max. Time: 3 Hours**

Course Title: Public Health Nutrition **Max. Marks: 70**

Course Code: SIAS NB 1 2 02 DCEC 4004

Instructions:

1. Question no. 1 has seven parts and students are required to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and students are required to answer any two parts of each question. Each part carries seven marks.

Q 1. Write short notes on the following (4X3.5=14)

a) Scope of public health nutrition
b) Ecological variables for assessing nutritional status
c) Triple burden of nutrition
d) Errors in assessing nutritional status
e) Health statistics
f) Diabetes
g) osteoporosis

Q 2. Explain the following (2X7=14)

a) Role of national and international agencies in determining health indicators.
b) Dietary requirement during antenatal and post-natal period.
c) Role of public health nutritionist in national development.

Q3. Write in detail about the following (2X7=14)

a) Anthropometric measurements and 24 Hour dietary recall method.
b) Biochemical and clinical methods for assessing the nutritional status of community.

c) Nutritional assessment and monitoring. How will you assess the nutritional status of a pregnant women? Explain.

Q 4. Describe the following (2X7=14)

a) Etiology, clinical features and health implications of vitamin D deficiency.

b) Clinical features and dietary management of anemia and iodine deficiency disorder.

c) Define micronutrient deficiencies. Differentiate between Kwashiorkor and Marasmus.

Q 5. Explain the following (2X7=14)

a) Clinical features and dietary management of cardiovascular diseases.

b) Etiology, clinical features and health implications of hypertension.

c) Impact of food and nutrition security at regional, state, national and international level.

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Term End Examinations June/ July 2023

Programme: M.Sc. Nutrition Biology

Semester: Second **Max. Time: 3 Hours**

Course Title: Therapeutic Nutrition **Max. Marks: 70**

Course Code: SIAS NB 12 09 C 4004

Instructions:

1. Question no. 1 has seven sub parts and students need to answer any four. Each sub part carries three and half Marks.

2. Question no. 2 to 5 have three sub parts and students need to answer any two sub parts of each question. Each sub part carries seven marks.

Question No. 1. (4X3.5=14)

a) Nutritional adequacy

b) Food faddism

c) Nutritional rehabilitation

d) Weaning food

e) lactogogues

f) Enteral feeding

g) Rheumatoid arthritis

Question No. 2. Write in brief : (2X7=14)

a) Explain the principles of planning a meal

b) Nutrition related problems of preschoolers

c) Discuss the modifications of calorie requirement during old age.

Question No. 3. Discuss on the followings: (2X7=14)

a) Which anemia is common during pregnancy, describe the complications of pregnancy.

b) Explain the reasons for increased nutrient requirement in lactation.

c) Explain the objectives of school lunch programmes.

Question No. 4. Discuss on the followings: (2X7=14)

a) Nutritional approach to tackle nutrition problems in emergencies.

b) Types of therapeutic diets.

c) Explain grades and therapeutic management of obesity.

Question No. 5. Write in brief (2X7=14)

a) Etiology and dietary management in diabetes

b) Symptoms and dietary management of hypothyroidism

c) Discuss the different types of tube feed used.