CENTRAL UNIVERSITY OF HARYANA

Term End Semester Examinations March 2023

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

Semester: First semester **Max. Time: 3 Hours**

Course Title: Human Nutritional Requirements **Max. Marks: 70**

Course Code: SIAS NB 1 1 03 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 students are required to answer any two parts of each question. Each part carries seven marks.

Q 1. (4X3.5=14)

a) Explain dietary reference intakes in brief.

b) Briefly discuss dietary guidelines for physical activity.

c) Explain growth with reference to cellular to physical aspects.

d) Describe in brief determinants of growth and development in children.

e) How does nutrition affect the development during childhood?

f) What are the altered nutritional requirements during space travel?

g) What do you understand by nutrigenomics?

Q 2. (2X7=14)

a) Explain dietary allowances recommended for normal, pregnant and lactating women.

b) How food pyramid helps in diet planning? Describe in detail.

c) What are recommended dietary allowances of macronutrients for all age group? Give details.

Q3. (2X7=14)

a) Describe the effect of maternal malnutrition cognitive development of foetus with examples.

b) What is the impact of altered nutrition on growth and development of children? Explain.

c) How body composition changes during life cycle. Explain its consequence on body physiology.

Q 4. (2X7=14)

a) Explain nutritional requirements during infancy and old age.

b) Describe physiological changes and altered nutritional requirements in low and high temperature.

c) Explain about the nutritional requirements of a sports person with reference to various types of sports activities.

Q 5. (2X7=14)

a) Describe various methods of assessing protein quality.

b) What are nutraceuticals and functional foods? Explain their importance by giving suitable examples.

c) Explain bio availability of nutrients. How nutrients are lost during cooking and processing?

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: PhD (Nut.Biology
Course Title: Research Methodology
Course Code: SIAS NB 02 01 01 C 4004

Semester: Course work
Max. Time: 3 Hour
Max. Marks: 60

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 Give details various sources employed in collection of primary and secondary data to make a research plan.

Q:2 What is a research problem? Enumerate the main issues which should receive the attention by the researcher in formulating the research problem. Give suitable examples to elucidate your points.

Q:3

(a) Research design in exploratory studies must be flexible but in descriptive studies, it must minimize bias and maximize reliability." Discuss.

(b) What do you mean by hypothesis? Enumerate various characteristics of a hypothesis.

Q:4 Elaborate on various statistical tools utilized for analyzing the significance and interpretation of the data.

Q:5 (a) Explain biosafety and ethics in terms of handling of genetically modified organisms and animal.

(b) Write any three safety practices and precautions for handling bio waste and radioactivity.

Q:6 (a) What is the role of Institutional biosafety committee and Institutional human and animal ethics committee? Write any three points for each.

(b) Write any three specific points for handling and disposal of flammable and hazardous chemicals.

Q:7 (a) What do you mean by scientific writing? Differentiate between research article and review.

(b) What are the different components of a research article? Briefly explain.

Q:8. (a) What is the difference between references and bibliography? Write any two electronic tools used for referencing.

(b) What is plagiarism and how it can be determined using electronic tools? What is Patent and IPR? Briefly explain.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations March 2023

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

Semester: First | **Max. Time: 3 Hours**

Course Title: Human Physiology | **Max. Marks: 70**

Course Code: SIAS NB 1 1 04 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) How does a cell maintain its internal environment constant? Briefly explain.

b) What is hypertension? Enlist the types and causes of it.

c) Define micturition and the role of diuretics.

d) Name the test used to diagnose the well-being of kidney and its principle.

e) What are hormones? Name any two hormones with their role in human physiology.

f) Differentiate hyper and hypogonadism?

g) Briefly discuss the causes of Ischemia.

Q 2. (2X7=14)

a) What is composition of a typical cell membrane? How does it regulate the transportation across cell membrane.

b) Classify and write the functions of each type of WBC. Mention the pathophysiological conditions associated with each due to dysregulation in their number.

c) Explain different types of blood groups and their possible genetic makeup. Mention any three blood related disorders and their associated pathophysiological conditions.

Q3. (2X7=14)

a) Explain the process of Urine formation. Under which pathophysiological condition proteins and cells comes out in the urine. Elaborate.

b) Discuss renal mechanisms for the control of blood volume, blood pressure and ionic composition of body fluids.

c) Elaborate on the mechanism of osmolarity and acid base balance regulation within body.

Q 4. (2X7=14)

a) Describe in detail: i) Cardiac Cycle ii) Cardiac output

b) Write a note on: i) Atherosclerosis ii) Myocardial Infarction

c) Explain the pathophysiology of: i) Peptic ulcer ii) Diarrhoeal disease.

Q 5. (2X7=14)

a) How execute glands are different from endocrine glands? Describe any one endo and exocrine glands with reference to the hormones released.

b) Enlist various functions of hypothalamus, pituitary, thyroid and adrenal glands.

c) What do you mean by diabetes? Describe its pathophysiology in detail.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. **Semester: Course work** **Course Title: Food and Nutrition Toxicology**

Max. Time: 3 Hour

Course Code: SIAS NB 02 01 02 DCEC 4004 **Max. Marks: 60**

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 Describe:

a. Classification of Food toxicants.

b. Factors affecting toxicity of a compound.

Q:2 Write a note on:

a. Nutrient toxicant interaction.

b. Principles of toxicology.

Q:3 Elaborate the:

a. *In - Vitro* techniques of toxicological research.

b. *In - Vivo* techniques of toxicological research.

Q:4 Enumerate:

a. Toxicants and allergens in foods derived from algae and mushrooms.

b. Food poisoning.

Q:5 a. What are NOTS? Explain in detailed.

b.What are chemical toxins? Describe.

Q:6 a. Describe the toxicants generated during food processing.

b. What are POPs? Explain in detail.

Q:7 What are intentional and unintentional additives? Explain.

Q:8. Describe the potential contaminants from food packaging material.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: M.Sc. Nutrition Biology | **Semester: First**

Course Title: Fundamentals of Food and Nutrition Science | **Max. Time: 3 Hours**

Course Code: SIAS NB 1101C 4004 | **Max. Marks: 70**

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 : Briefly describe (4X3.5=14)

a. Balanced Diet
b. Reference man and women
c. Recommended dietary allowance (RDA)
d. Protein Energy Malnutrition (PEM)
e. Sun-Shine Vitamin
f. Goitre
g. Food exchange list.

Question No. 2. (2X7=14)

a) Explain the relation between food, nutrition, health and disease by taking an example.
b) Enumerate the importance of various traditional methods use for enhancing nutritive value of food.
c) Enlist the various food group systems and explain how are they beneficial in diet planning.

Question No. 3. (2X7=14)

a) Explain the classification, functions and sources of carbohydrates.

b) Enumerate on digestion and absorption of lipids.

c) Briefly discuss the Clinical manifestations of deficiency and excess of fat soluble vitamins.

Question No. 4. (2X7=14)

a) What is BMR? Discuss the factors affecting BMR.

b) Elaborate on the techniques and methods of nutritional assessment.

C) Enlist the major nutritional problems in India and discuss one of them in detail.

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

a) Write about the various methods of cooking and its effect on nutrient content of food.

b) Discuss the principles and factors required during meal planning.

c) Does meal planning depend upon age of an individual? Discuss with examples.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations March 2023

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

Semester: First | **Max. Time: 3 Hours**

Course Title: Nutritional Biochemistry-I | **Max. Marks: 70**

Course Code: SIAS NB 1 1 02 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 students are required to answer any two parts of each question. Each part carries seven marks.

Q 1. (4X3.5=14)

a) How direct calorimetery is different from indirect calorimetery?

b) Differentiate between BMR and RMR.

c) What is the importance of NADPH in human physiology?

d) What is meant by Omega and Delta system in fatty acid nomenclature?

e) How bile salts helps in lipid's digestion?

f) How does pH affect the charge on a protein molecule?

g) Enumerate any one role of oxidative deamination in metabolism?

Q 2. (2X7=14)

a) Explain enzyme inhibitions in detail.

b) Elaborate on seven different agents used in energy regulation with reference to their source, Stimulus and action.

c) Discuss various components of energy expenditure.

Q3. (2X7=14)

a) Comment upon the role of hexose mono phosphate shunt in metabolism.

b) How NADH is transferred in mitochondrial matrix despite the fact the inner mitochondrial membrane is impermeable to it. Discuss in detail.

c) How glucose is taken up by the cells. Elaborate on it with reference to the role of Insulin in the uptake mechanism.

Q 4. (2X7=14)

a) Give details of Lipid's digestion and absorption process.

b) Enumerate the reactions involved in the synthesis of acetyl Co-A from palmitate.

c) Discuss the in detail the role various lipoprotein in lipid metabolism.

Q 5. (2X7=14)

a) Give details of various structural levels of proteins with examples.

b) Comment upon the absorption process of proteins in intestinal cells.

c) How ammonia is removed in humans. Give details of the metabolism involved.