

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May 2018

Programme: MSc Nutrition Biology

Session: 2017-18

Semester: 2nd

Max. Time: 3 Hours

Course Title: Bioinformatics

Max. Marks: 70

Course Code: SIAL NB 01 02 03 GEC 0303

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 following terms

(4X3.5=14)

- a. PDB
- b. Pubmed
- c. Input devices in computer organization
- d. Rooted tree
- e. Genome & proteome
- f. KEGG
- g. Protpram

Question No.2

(2X7=14)

- a. Outline the steps of protein structure downloading from PDB.
- b. Write down the following with respect to nucleotide sequence: similarity, identity, homology, alignment
- c. Write down about the historical back ground of Bioinformatics.

Question No.3

(2X7=14)

- a. Differentiate between the rooted and unrooted tree along with their construction.
- b. Outline the steps of multiple sequence alignment using CLUSTALW.
- c. Discuss various levels of protein structure.

Question No.4

(2X7=14)

- a. Differentiate between maximum parsimony and maximum likelihood.
- b. Differentiate between local and global alignment.
- c. Discuss BLAST and CLUSTAL.

Question No.5

(2x7=14)

- a. Explain the role of bioinformatics in genomics and computer added drug designing.
- b. Differentiate among primary, secondary and composite databases.
- c. Discuss about structure viewers and molecular file formats.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations May /June 2018

Programme: M.Sc. (Nutrition Biology)

Session: 2017-18

Semester: Second

Max. Time: 3 Hours

Course Title: Nutritional Biochemistry II

Max. Marks: 70

Course Code: SIAL NB 01 02 05 C4004

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 Write Short notes on the following: (4X3.5=14)

- a) Fluoride Toxicity
- b) Second Messengers
- c) Growth hormone disorders
- d) Metabolic Acidosis
- e) Chloride Shift
- f) Vitamin K cycle
- g) Vitamin E as antioxidant

Question No. 2. Explain in detail on the following with examples wherever necessary: (2X7=14)

- a) Hormonal control of fluid and electrolyte homeostasis.
- b) Functions of potassium. How are its levels maintained in the body? What are the causes and consequences of disturbance in its level?
- c) Functions, distribution and normal levels of sodium in various fluid compartments. How is absorbed and transported in the body. What are the causes of hypernatremia?

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

- a) Biochemical basis of the role of vitamin A in vision. Discuss its deficiency manifestations beside night blindness.
- b) Vitamin D deficiency disorders. Explain the mechanism of action of vitamin D and justify its role as a hormone.
- c) Sources, biochemical functions and daily requirements of Vitamin B₁₂. What are causes and consequences of its deficiency?

Question No. 4. Explain on the following with suitable examples:- (2X7=14)

- a) Overview of iron homeostasis in the body. What are the disorders of iron deficiency?
- b) Physiological functions of calcium. Discuss about its deficiency disorders and the factors which affect its absorption levels in the blood.
- c) Copper containing enzymes and as well as daily requirement of this metal. Briefly discuss about the diseases associated with abnormal metabolism of copper.

Question No. 5. (2X7=14)

- a) Explain the mechanism of insulin action with special reference to carbohydrate metabolism. Why uncontrolled diabetes mellitus is associated with ketonuria and ketoacidosis?
- b) Give an overview of biosynthesis, release and mechanism of action of thyroid hormone.
- c) Describe the disorders associated with glucocorticoid hormone deficiency and excess.

How is this hormone synthesized and transported?

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May 2018

Programme: MSc Nutrition Biology

Session: 2017-18

Semester: 2nd

Max. Time: 3 Hours

Course Title: Nutraceutical & Functional Foods

Max. Marks: 70

Course Code: SIAL NB 01 02 01 DCEC 5005

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. Functional Foods
- b. Prebiotics
- c. Synbiotics
- d. Benefits of probiotics
- e. Examples of probiotic microorganisms
- f. Examples of synbiotics food products
- g. Fortified foods

Question No.2

(2X7=14)

- a. Write down the scope and relevance of nutraceuticals and dietary supplements.
- b. Explain the applications of nanotechnology in functional food.
- c. Write down the ICMR guidelines for probiotics.

Question No.3

(2X7=14)

- a. Write down the classification of nutraceuticals with respect to probiotic, prebiotic and synbiotic.
- b. Discuss about the International regulations for nutraceuticals & functional foods.
- c. Explain the applications of probiotics in risk reduction of disease.

Question No.4

(2X7=14)

- a. Discuss the various mechanism of action of probiotics.
- b. Explain the use of probiotics in non-milk products.
- c. Discuss the various methods generally used for the extraction and isolation of nutraceuticals.

Question No.5

(2x7=14)

- a. Discuss the cellular and molecular mechanism of action of nutraceuticals.
- b. Write down the importance of prebiotics in functional foods.
- c. Explain the characteristics of an ideal probiotics.

CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, May/June 2018

Programme : M.Sc. Nutrition Biology
Semester : II
Course Title : Food Microbiology and Food Safety
Course Code : SIAL NB 01 02 07 C 4004

Session: 2017-18
Max. Time: 3 Hours
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 define the following:-

(4X3.5=14)

- a. Bacterial toxins
- b. Disinfection and sterilization
- c. Health benefits of fermented foods
- d. Antimicrobial substances in foods
- e. Total Quality management (TQM)
- f. Total Viable Count (TVC) technique
- g. Microbiological Risk Assessment (MRA)

Question No.2. Discuss in detail about the following:-

(2X7=14)

- a. Food Safety Management Tools
- b. Extrinsic factors affecting the growth of microorganisms in food
- c. Sources of microbial contamination in foods

Question No.3. Explain on the following questions with suitable examples:-

(2X7=14)

- a. Bacteria and fungi involved in spoilage of fruits and vegetables
- b. General symptoms of food borne illnesses
- c. Difference between food borne infection and food borne intoxication

Question No.4. Write detailed notes on the following with suitable example:-

(2X7=14)

- a. Chemical methods for controlling microorganisms in food
- b. Microorganisms involved in production of vinegar, yoghurt and wine
- c. Microorganisms associated with oriental fermented foods

Question No.5. Discuss on the following statements:-

(2x7=14)

- a. Bio-preservation of food
- b. Conventional and rapid methods of enumeration of microorganisms from food
- c. Various types of hazards associated with food manufacturing industries

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May/June 2018

Programme: M.Sc (Nutrition Biology)

Session: 2018-19

Course Title: Biostatistics and Research Methods

Max. Marks: 70

Course Code: SIAL NB 01 02 06 C 4004

Max. Time: 3 Hours

Semester : II

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 explain:

(4X3.5=14)

- a) Regression
- b) SPSS
- c) Schedule method
- d) T test
- e) Dispersion
- f) Z test
- g) Skewness & Kurtosis

Question No. 2. Discuss the following Statement:-

(2X7=14)

- a) Functions of statistics
- b) Complex random sampling design
- c) Measurement scales

Question No. 3. Describe the following in detail:

(2X7=14)

- a) Why tabulation & coding is considered essential in a research study.
- b) Questionnaire & interview method
- c) Graphic representation of data

Question No. 4. Write on the following along with suitable examples

(2X7=14)

- a) Measures of central tendency
- b) Basics concepts concerning testing of hypotheses.
- c) State the uses and application of χ^2

Question No. 5. Write detailed notes on:

(2X7=14)

- a) Qualitative and quantitative research tool
- b) Design of the research project.
- c) Social responsibility and ethics in research

