Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 1st year 1st Semester Final Examination, 2020
Subject: Inorganic Chemistry (Theory)
Course Code: ICM-101 (T)

Full Marks: 35 **Time: 2 hours**

Set-1

(Figures in the right margin indicate full marks. Answer any **four questions** where question no. **1** is compulsory. Split answer is not allowed.)

Section-A

1. Derive Henderson-Hesselbalch equation for acidic buffer solution. 05

2. a) Define covalent bonding. 02
   b) Explain the formation of H_2O and CO_2 molecule. 04
   c) Explain the term "Variable Covalency". 04

3. a) What is hydrogen bonding? 02
   b) Explain Inter and Intra molecular hydrogen bonding. 02
   c) Write down the significance of hydrogen bonds. 03
   d) Why does ice float on water? 03

4. a) What do you mean by fixation of nitrogen? 03
   b) Describe the production process of soda ash by solvey process with a flow diagram. 07

5. a) What are inert gases? Why are they so called? 02
   b) Discuss the separation of inert gases from their mixture by Dewar's Charcoal method. 05
   c) Write down the importance of inert gases. 03

Assignment topics of Inorganic Chemistry (ICM-101)

Marks: 35

1.Chemical Bonding: Classifications, Formations and Significance
2. Oxidation Reduction Reactions
3. Inert gases: Isolations and Applications
4. Hydrogen: Position, Production and Uses
5. Group IA elements: Position, Production and Uses
6. Group IIA elements: Position, Production and Uses
7. Group IIIA elements: Position, Production and Uses
8. Group VA elements: Position, Production and Uses
9.Halogen
10. Compounds of Sodium and Carbon

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Section - B

External

Chattogram Veterinary and Animal Sciences University (CVASU)
BFST 1st Year 1st Semester Final Examination 2020: Assignment
Course Title: Human Biology (Theory)
Course Code: HBL-101 (T)
Full Marks: 35

Guidelines to answer the assignments:

1. A cover page as per the format given should be attached on the top of the set.
2. Assignment should be hand written on A4 size sheet/paper.
3. Strictly use Black color ink only for writing the assignments.
4. Assignments should not be copied, should be clear, readable and well presented.
5. Assignment should be submitted within the deadline assigned by the Dean office, FFST, CVASU.

Assignment-1: Write an assignment on "**Functional Organizations and Controlling System of Human Body**".
Explain your learning about different parts and their composition of human body. Also give a comprehensive self-assessment of your knowledge about the application of controlling system in real life situation with figure.

Assignment-2: Write an assignment on "**Cell and Tissues**".
Explain your learning about the structure, composition and functions of different cells and tissues with figures and examples.

Assignment-3: Write an assignment on "**Circulatory System**"
Describe the different types, parts, functions and composition of circulatory system. Also give appropriate examples with figures.

Assignment-4: Write an assignment on "**Blood and Blood Clotting System**"
Describe the physiology, Clotting mechanism, homeostasis and importance of blood clotting to save lives.

Assignment-5: Write an assignment on "**Body Fluid and Electrolyte Balance**"
Explain why body systems maintain fluid and electrolyte balance? What factors affect fluid and electrolyte balance? Also describe the regulation of water and electrolyte balance in human body.

Assignment-6: Write an assignment on "**Overview of the Alimentary System**"
Explain the anatomy and physiology; different organs and their functions of alimentary system with figures.

Assignment-7: Write an assignment on "**Overview of the Urinary System**"
Explain the organs, functions, facts and diseases of urinary system. Also draw and label the unit of urinary system.

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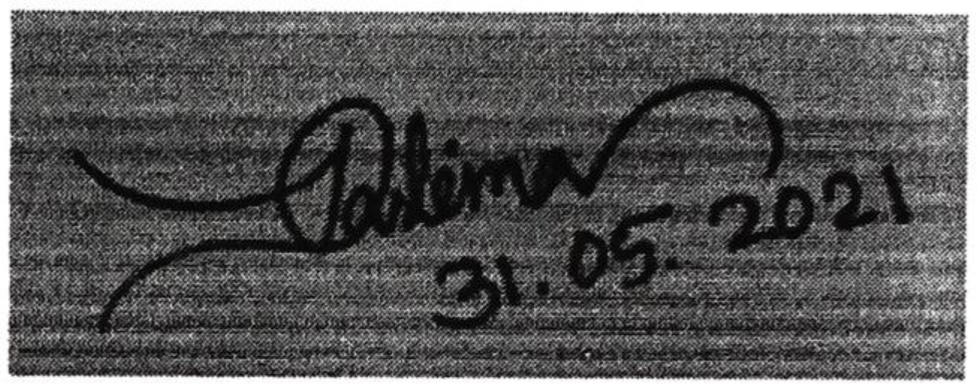
Assignment-8: Write an assignment on **"Overview of the Respiratory System"**
Explain the organs, functions, facts and diseases of respiratory system. Also describe the gaseous transport mechanism in the blood and body fluid.

Assignment-9: Write an assignment on **"Overview of the Reproductive System"**
Explain the organs, functions, facts and diseases of reproductive system. Also describe the importance of reproductive system in human life.

Assignment-10: Write an assignment on **"Overview of the Endocrine System"**
Explain the organs, functions, facts and diseases of endocrine system. Also describe the transport mode of hormone in human body.



Chattogram Veterinary and Animal Sciences University (CVASU)
BFST 1st Year 1st Semester Final Examination 2020: Assignment
Course Title: Introductory Human Nutrition (Theory)
Course Code: IHN-101 (T)
Full Marks: 35

Guidelines to answer the assignments:

1. A cover page as per the format given should be attached on the top of the set.
2. Assignment should be hand written on A4 size sheet/paper.
3. Strictly use Black color ink only for writing the assignments.
4. Assignments should not be copied, should be clear, readable and well presented.
5. Assignment should be submitted within the deadline assigned by the Dean office, FFST, CVASU.

Assignment-1:Importance of nutrition in human growth and development

Define growth, development. Explain the importance of nutrition in human growth and development. Discuss the role of nutrition in human growth and development.

Assignment-2:Low birth weight

Define low birth weight. Explain Classification, Causes, Complication, Management of low birth weight baby.

Assignment-3:Role of nutrition during pregnancy

Explain Physiological Changes in Pregnancy, Weight Gain During Pregnancy. Describe Need for Additional Nutrients to Meet the Demand, Nutritional Requirements During Pregnancy and problems During Pregnancy.

Assignment-4:Importance of nutrition during adolescence period

Explain Growth Spurt, Physical, Physiological and Psychological Changes, Recommended Nutrient Allowances, Change in Eating Habits, Nutrition Related problems.

Assignment-5:Importance of nutrition during aging

Define Aging. Explain Physical, Physiological and Psychological Changes, Nutritional Needs, Nutrition Related Problems of Elderlyand Modificationof diet to suit the needs.

Assignment-6:An overview on Breastfeeding

Describe definition, Types, Importance of breastfeeding, Composition of breast milk, Comparison between breast milk, cow's milk and powder milk

Assignment-7:An overview on weaning

Explain definition, Importance of weaning, Stages of weaning, criteria of weaning food

Assignment-8:Complementary feeding and supplementary feeding

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Explain Definition, Importance of supplementary feeding and complementary feeding, Criteria of complementary food, Guidelines of complementary feeding.

Assignment-9: Nutritional disorders of Bangladesh

Explain definition, types, factors, causes of nutritional disorders

Assignment-10: Interrelationship between health and nutrition

Explain Importance of good health, Guidelines for good health, Relationship between health and nutrition

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Chattogram Veterinary and Animal Sciences University (CVASU)
BFST 1st Year 1st Semester Final Examination 2020: Assignment
Course Title: Elementary Food Science (Theory)
Course Code:EFS-101 (T)
Full Marks: 35

Guidelines to answer the assignments:

1. A cover page as per the format given should be attached on the top of the set.
2. Assignment should be hand written on A4 size sheet/paper.
3. Strictly use Black color ink only for writing the assignments.
4. Assignments should not be copied, should be clear, readable and well presented.
5. Assignment should be submitted within the deadline assigned by the Dean office, FFST, CVASU.

Assignment-1:Scope of food science

Describedefinition, components and development of food science, activities and scope of food science content of foods and their significance, Aspect of food science, Concepts of foods, Food sources, Classification of foods, Nutritive values of common food stuffs, Functions of foods.

Assignment-2:An overview on carbohydrate

Explain Sources, Classification and function of food carbohydrates, Maintance of blood glucose, Dietary Fiber.

Assignment-3:Importance of protein

Explain Sources, classification and function of protein; Common food proteins, Amino acids and their classification

Assignment-4:An overview on fat

Explain Sources, classification and function of fat. Poly-unsaturated Fatty Acids, hydrogenation and rancidity.

Assignment-5:General discussion on vitamins

Explain Functions, RDA, deficiency disorders, Sources and structures of minerals & vitamins.

Assignment-6:An overview on minerals

Explain Functions, RDA, deficiency disorders, Sources and structures of minerals & vitamins.

Assignment-7:Importance of pigments and flavoring agents

Explain Importance, types and sources of pigments -their changes during processing and storage (Browning reaction).

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Assignment-8: An overview onAnti-Nutrients

Explain definition, sources, classification, function, health effect.

Assignment-9: An overview onPhytochemical:

Explain definition, sources, classification, function, health effect.

Assignment-10:An overview on food security

Explain **d**efinitions, Concepts and pillars of food security, Factors affecting food security, Future food security - global action plans and visions, Difference between food safety and security.

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Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 1st year 1st Semester Final Examination-2020
Subject: Introductory Human Nutrition (Theory)
Course Code: IHN-101

Full Marks: 35 **Time: 2 hours**

Set-01

(Figures in the right margin indicate full mark. Answer any **4 (Four)** questions where question no. **1** is compulsory. Split answer is not allowed.)

Section-A

1.	a)	Define nutrition.	1
	b)	Briefly describe the history of human nutrition.	4
2.	a)	Differentiate between human growth and development.	4
	b)	Mention the role of nutrients in human growth and development.	4
	c)	List out the importance of good health.	2
3.	a)	Mention the nutritional requirements during pregnancy.	5
	b)	Write down the physiology of lactation.	3
	c)	Summarize the hormonal control during lactation.	2
4.	a)	Define weaning. Write down the guidelines to prepare weaning food.	1+2=3
	b)	Illustrate the stages of weaning.	4
	c)	Differentiate between complementary and supplementary feeding.	3
5.	a)	What is balanced diet? Enlist the components of balanced diet.	1+3=4
	b)	Shortly describe the factors affecting meal planning.	4
	c)	Define pre-term and term baby.	2

Set-01

(Figures in the right margin indicate full mark. Answer any **4 (Four)** questions where question no. 1 is compulsory. Split answer is not allowed.)

Section-A

1.	a)	Define nutrition.	1
	b)	Briefly describe the history of human nutrition.	4
2.	a)	Differentiate between human growth and development.	4
	b)	Mention the role of nutrients in human growth and development.	4
	c)	List out the importance of good health.	2
3.	a)	Mention the nutritional requirements during pregnancy.	5
	b)	Write down the physiology of lactation.	3
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5.	a)	What is balanced diet? Enlist the components of balanced diet.	1+3=4
	b)	Shortly describe the factors affecting meal planning.	4
	c)	Define pre-term and term baby.	2

BFST 1st Year 1st Semester Final Examination 2020

Course Title: Mathematics-I (T)

Course Code: MTH-101 (T)

Section B: Assignment **Full Marks: 35**

1. ~~Assignment on~~ System of Linear Equation and their solution by different techniques.
2. ~~Assignment on~~ Introduction of Matrices. Complete illustration of different types of matrices with algebraic operation.
3. ~~Assignment on~~ Introduction of Linear Programming (LP) problems and solve all possible types of LPs using Graphical Solutions.
4. ~~Assignment on~~ Basics of Functions. Narrate limit, continuity and differentiability with proper examples.
5. ~~Assignment on~~ Illustration of Successive Differentiation and application of Leibnitz's Theorem.
6. ~~Assignment on clear~~ Depiction of Gamma and Beta function from definition to application.
7. ~~Assignment on~~ Estimation of area bounded by curves, and find volume and surface area of revolution.
8. ~~Assignment on~~ Introduction of Integration. Application of different types of integration method with example.
9. ~~Assignment on~~ Justification of Mean-value theorem and Rolle's Theorem. Find Taylor and Maclaurin series with an example for each.
10. ~~Assignment on~~ Pair of Straight Line, Direction Cosine and Direction Ratios of a straight line.

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Moderation OK.

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 1st year 1st Semester Final Examination-2020
Subject: Elementary Food Science (Theory)
Course Code: EFS-101

Full Marks: 35 **Time: 2 hours**

Set-01

(Figures in the right margin indicate full mark. Answer any **4 (Four)** questions where question no. **1** is compulsory. Split answer is not allowed.)

Section-A

1.	a)	Define food.	1
	b)	Classify the types of food.	4
2.	a)	Write down the structure of maltose, sucrose and lactose.	3
	b)	Enlist the functions of carbohydrate.	3
	c)	Briefly describe the role of hormone to maintain blood glucose level in human body.	4
3.	a)	Classify protein based on their chemical composition.	3
	b)	Write down the functions of fat.	3
	c)	List out the sources and deficiency diseases of following vitamins- i. Vitamin D ii. Vitamin B_1 iii. Vitamin B_3 iv. Vitamin B_{12}	4
4.	a)	What do you mean by browning reaction?	3
	b)	How do you prevent browning reactions during food processing?	3
	c)	Classify anti-nutritional factors.	4
5.	a)	Differentiate between saturated and unsaturated fatty acid.	3
	b)	Briefly describe the functions of dietary water.	3
	c)	Enumerate the functions of Vitamin- A, D, E and K.	4

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 1st year 1st Semester Final Examination 2020
Subject: Physics-I (Theory)
Course Code: PHC-101(T)

Full Marks: 35.0 **Set-A** **Time: 2 hours**

(Figures in the right margin indicate full mark. Answer any 5 (Five) questions. **Split answer is strongly discouraged.**)

Section-A

1. a) Show that the work done per unit volume in straining body is equal to ½ × Stress × Strain. 4
   b) The Young's modulus of a metal is 2×10^{11} N/m^2 and its breaking stress is 1.078×10^9 N/m^2. Calculate the maximum amount of energy per unit volume which can be stored in the metal when stretched. 3

2. a) Define elastic limit. Draw the stress-strain curve of a material and write down its physical significance. 3
   b) Show that, 4

$$Y = \frac{9\eta K}{3K + \eta}$$

Where the symbols have their usual meanings.

3. a) Prove that Poiseuille's equation for the rate of flow of a viscous liquid through a capillary tube is 6

$$\eta = \frac{\pi P r^4}{8lV}$$

Where the symbols have their usual meanings.

   b) What do you mean by stream line and turbulent flow of a liquid? 1

4. a) Show that the excess pressure inside a spherical liquid drop is 4

$$p = \frac{2T}{r}$$

Where the symbols have their usual meanings.

   b) Explain briefly surface tension from the viewpoint of molecular theory of matter. 2
   c) Define co-efficient of viscosity. 1

5. a) Explain the terms (*i*) Angle of contact (*ii*) Reynold's number (*iii*) Surface energy. 3
   b) State rate of flow of a liquid. Water flows through a horizontal pipe line of varying cross-section at the rate of 0.2 m^3/s. Calculate the velocity of water at a point where the area of cross-section of the pipe is 0.02 m^2. 4

6. a) Define mean free path. Derive an expression for mean free path. 3
   b) Explain the terms: (*i*) Isothermal (*ii*) Adiabatic (*iii*) Isobaric and (*iv*) Isochoric process. 4

Chittagong Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 1st year 1st Semester Final Examination 2020
Subject: Mathematics-I (Theory)
Course Code: MTH-101(T)

Full Marks: 35.0 **Set-A** **Time: 2 hours**

(Figures in the right margin indicate full mark. Answer any 5 (Five) questions. **Split answer is strongly discouraged.**)

Section-A

1. a) State the relation between direction cosine and direction ratio. 3
   b) Find the direction cosine for the direction ratios of 2, 2, 2. 4

2. a) Estimate the volume of $y = \sqrt{x}$, $y = 2$ and $x = 0$ is resolved about y-axis. 5
   b) Differentiate between definite and indefinite integrals. 2

3. a) Find the angle between $2x + 3y - 2 = 0$ and $x + 4y + 2 = 0$. 3
   b) Determine the equation of bisectors of the angle lines $3x - 4y + 6 = 0$ and $12x + 5y + 9 = 0$. 4

4. a) Find the n^{th} derivative of $\sin^2 x \cos^3 x$. 3
   b) Prove that the following function satisfy the mean value theorem. 4
   $f(x) = x^3 + 2x^2 - x$ on $[-1, 2]$

5. a) Find the domain and range of 3
   $f(x) = \sqrt{9 - x^2}$
   b) Show that for any real values of x, $f(x) = x^2 + 2x + 1$ is continuous. 4

6. a) Define square matrix. Find transpose of the following matrix. 3

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \\ 2 & 1 & 3 \end{bmatrix}$$

   b) Find the inverse of following matrix. 4

$$A = \begin{bmatrix} 2 & 1 & 1 \\ 1 & 2 & 3 \\ 2 & 4 & 9 \end{bmatrix}$$

Section: A

Full Marks: 18 Time: 1 Hour

Figures in the marine indicate full marks.

Answer ALL the questions.

5. Correct the following sentences if they are incorrect. If the sentence is correct, just copy it. 5
   a. Only one third of the tasks has been completed.
   b. Global warming is one of the burning issue of the present word.
   c. If I was you, I agreed to the proposal.
   d. It is you who is to blame.
   e. If we had some more time, we would have finished the job.

6. Complete the following sentences: 5
   a. Had I met him, _____
   b. _____ though there is much information regarding health.
   c. Having had lunch, _____.
   d. It is your hard work that _____.
   e. He can't even kick a ball, let alone _____.

7. Pot planting and rooftop gardening don't only have decorative benefits, they can be a great source of pleasure, oxygen and fresh food. Suppose, you would like to encourage people regarding pot planting and rooftop gardening. Write a letter to the editor of an English daily in this regard. 5

8. Change the following sentences as directed: 3
   a. The factory had been burned down. (Change the voice.)
   b. Who let the dog out? (Change the voice.)
   c. "Mom, if I wear my sweater, will you let me have an ice-cream?" said the little girl. (Change the speech.)

Set: A

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 1st Year 1st Semester Final Examination 2020
Course Title: Communicative English
Course Code: ENG 101
Section: A
Full Marks: 18 Time: 1 Hour

Figures in the marine indicate full marks.

Answer ALL the questions.

1. Correct the following sentences if they are incorrect. If the sentence is correct, just copy it. 5
   a. Our family doctor recommends that my father eats a balanced diet.
   b. Global warming is one of the burning issue of the present word.
   c. If I was you, I agreed to the proposal.
   d. It is you who is to blame.
   e. Two hours is enough for completing such a task.

2. Complete the following sentences: 5
   a. Had I met him, _____
   b. _____ though there is much information regarding health.
   c. Having had lunch, _____.
   d. If you desire to succeed in life, _____.
   e. He can't even kick a ball, let alone _____.

3. Pot planting and rooftop gardening don't only have decorative benefits, they can be a great source of pleasure, oxygen and fresh food. Suppose, you would like to encourage people regarding pot planting and rooftop gardening. Write a letter to the editor of an English daily in this regard. 5

4. Change the following sentences as directed: 3
   a. My pocket was picked last week. (Change the voice.)
   b. Who let the dog out? (Change the voice.)
   c. "Mom, if I wear my sweater, will you let me have an ice-cream?" said the little girl.(Change the speech.)

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 1st Year 1st Semester Final Examination 2020
Course Title: Communicative English
Course Code: ENG 101
Full marks: 17
Section: B

Assignment

Write an essay of about 450 to 500 words on one of the following.

Number	Assignment topic	Assigned group
1	Food adulteration- methods, concerns and remedies	G – 1
2	Social communication- the past, present and future	G – 2
3	Climate change and the future of Bangladesh	G – 3
4	Environmental pollution- causes, effects and remedies	G – 4
5	The digital world- the good sides and the bad sides	G – 5
6	Smartphone and our life	G – 6
7	Social media and its impact on us	G – 7
8	Global warming and the future of the world	G – 8
9	E-learning- pros, cons and challenges	G – 9
10	The impact of Covid- 19 on the education sector	G – 10

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 1st year 1st Semester Final Examination-2020
Subject: Human Biology (Theory)
Course Code: HBL-101

Full Marks: 35 **Time: 2 hours**

Set-01

(Figures in the right margin indicate full mark. Answer any **5 (Five)** questions. Split answer is not allowed.)

Section-A

1. a) Define homeostasis. 1
   b) What is the importance of homeostasis to human and living things? 2
   c) Explain negative and positive feedback with examples. 4

2. a) Why is cell called the basic structural and functional unit of life? 2
   b) Give an outline of chemical composition of cell. 5

3. a) Why is nephron called the functional unit of kidney? 1
   b) Draw and label the different parts of a typical nephron. 3
   c) Calculate the renal plasma flow from the following data- 3
      i. concentration of PAH in urine = 14 mg/ml
      ii. concentration of PAH in plasma = 0.02 mg/ml
      iii. volume of urine =1000 ml/24 hrs
      iv. extraction ratio of PAH = 0.9

4. a) Narrate the role of respiratory system in human body. 3
   b) Describe the mechanism of transport of O_2 from lung to tissue. 4

5. a) What does blood group mean? 1
   b) Why is ABO system called the classical blood group? 2
   c) Enumerate the coagulation steps of blood. 4

6. a) Write down the physiological importance of nucleus. 3
   b) Give an overview of circulatory organs and their functions. 4

Chattogram Veterinary and Animal Sciences University
Faculty of Food Science and Technology
BFST 1st year 1st Semester Final Examination-2020
Subject: Human Biology (Theory)
Course Code: HBL-101

Full Marks: 35 **Time: 2 hours**

Set-02

(Figures in the right margin indicate full mark. Answer any **5 (Five)** questions. Split answer is not allowed.)

Section-A

1.	a)	Enlist the digestive juice with their daily secretion.	3
	b)	Summarize the composition and functions of succus entericus.	4
2.	a)	What do you mean by digestion and absorption?	2
	b)	How does the body digest and absorb protein?	5
3.	a)	Differentiate between ECF and ICF.	3
	b)	Explain renin-angiotensin mechanism of water balance.	4
4.	a)	What are the major intracellular and extracellular electrolytes?	2
	b)	Sketch out the body fluid distribution in human body.	5
5.	a)	Differentiate between plasma and serum.	2
	b)	Give a brief outline of urine formation, concentration and acidification.	5
6.	a)	Enlist the hormones that are secreted from pituitary gland with their functions.	3
	b)	Construct the mode of actions of hormone.	4