C–7934

Sub. Code
96313

B.Sc. DEGREE EXAMINATION, APRIL 2026

First Semester

Nutrition and Dietetics

FOOD SCIENCE

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following best describes malnutrition?
   (a) Eating a balanced diet
   (b) Consuming excessive amounts of food
   (c) A deficiency or excess of nutrients in the diet
   (d) Having a healthy appetite

2. _____ is primary purpose of cooking food using moist heat methods.
   (a) To enhance flavour
   (b) To reduce cooking time
   (c) To preserve nutrients
   (d) To improve texture and tenderness

3. Which of the following millets is known for its high calcium content?
   (a) Maize (b) Jowar
   (c) Ragi (d) Bajra

4. _____ is the main purpose of parboiling rice.

(a) To enhance flavor

(b) To improve cooking quality and nutrient retention

(c) To change its color

(d) To increase shelf life

5. What happens during the ripening of fruits?

(a) Decrease in sugar content

(b) Increase in starch content

(c) Conversion of starch to sugar

(d) No change in texture

6. Which method is commonly used to prepare tea?

(a) Boiling vegetables

(b) Steeping leaves in hot water

(c) Fermenting grains

(d) Blending fruits

7. Which of the following is a common cut of meat from the hindquarters of cattle?

(a) Chuck (b) Rib

(c) Sirloin (d) Brisket

8. What is a key characteristic of fish that distinguishes it from other types of meat?

(a) Higher fat content

(b) Lower water content

(c) Flakiness due to muscle structure

(d) More connective tissue

9. In sugar cookery, what is the stage called when sugar syrup reaches a temperature of 112-115°C and forms a soft ball when tested in cold water?

(a) Hard crack stage (b) Soft ball stage

(c) Thread stage (d) Firm ball stage

10. Which spice is commonly used in Indian cookery for its medicinal properties and is known for its anti-inflammatory effects?

(a) Turmeric (b) Cumin

(c) Coriander (d) Mustard

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe balanced diet.

Or

(b) Mention the importance of body building foods.

12. (a) State the significance of fortification of cereals.

Or

(b) Write the advantages of germination of pulses.

13. (a) Elucidate the changes during ripening of fruits.

Or

(b) Explain the nutritive value of vegetables.

14. (a) Draw a neat diagram and composition of meat.

Or

(b) Write a short note on role of egg in cookery.

15. (a) Explain the importance of hydrogenation.

Or

(b) Write an account crystallization of sugar.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Elaborate nutritional classification of foods.

Or

(b) Describe in detail about food groups.

17. (a) Criticize in detail about nutritional importance cereals.

Or

(b) Write in detail about malting of cereals.

18. (a) Explain in detail on nutritive value of fruits.

Or

(b) Elaborate preparation of carbonated non-alcoholic beverages.

19. (a) Discuss in detail about different types of milk.

Or

(b) Write in detail about tenderness of meat.

20. (a) Describe in detail about composition processing and refining of fats.

Or

(b) Explain in detail about spices and condiments.

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C–7935

Sub. Code
96314

B.Sc. DEGREE EXAMINATION, APRIL 2026

First Semester

Nutrition and Dietetics

FOOD CHEMISTRY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Water soluble vitamins include:
   (a) Carotenoids
   (b) Ascorbic acid
   (c) Vitamin D
   (d) More than one of the above

2. What is the monomer unit of glycogen?
   (a) fructose (b) Glucose
   (c) Galactose (d) Mannose

3. Which of the following is an example of non-infectious disease?
   (a) Pneumonia (b) High blood Pressure
   (c) Influenza (d) Typhoid

4. Sucrose is composed of which of the following two sugars
   (a) Glucose and Glucose
   (b) Glucose and Fructose
   (c) Glucose and Galactose
   (d) Fructose and Galactose

5. Digested food is absorbed in the
   (a) liver (b) large intestine
   (c) anus (d) small intestine

6. Melting point of fat is _____ and melting point of oil is _____.
   (a) Higher, higher (b) Lower, lower
   (c) Higher, lower (d) Lower, higher

7. Vegetable ghee is manufactured by
   (a) Saponification
   (b) Hydrogenation
   (c) Oxidative polymerization
   (d) Reduction polymerization

8. Dietary fats are transported as-
   (a) Chyclomicrons (b) Liposomes
   (c) Lipid globules (d) Oil droplets

9. Vegetable ghee is manufactured by
   (a) Saponification
   (b) Hydrogenation
   (c) Oxidation polymerisation
   (d) Reduction polymerisation

10. Photosynthetically active radiation (PAR) represents the following range of wavelengths
   (a) 450-950 nm (b) 340-450 nm
   (c) 400-700 nm (d) 500-600 nm

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Define bound water and free water in foods with examples.

Or

(b) Explain the significance of hydrogen bonding in food moisture retention.

12. (a) Describe the stages of sugar cookery and their applications in food preparation.

Or

(b) Explain the factors affecting the crystallization of sugar in candy making.

13. (a) Discuss the role of fermentation in improving the nutritional quality of proteins.

Or

(b) Explain the effect of acid and alkali on the properties of vegetable proteins.

14. (a) Define rancidity and explain its types with examples.

Or

(b) Discuss the role of emulsifiers in fat-based food products.

15. (a) Explain enzymatic browning and its effects on food quality.

Or

(b) Describe the properties and functions of pectin's in food products.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain the importance of moisture content in foods and describe different methods for its determination.

Or

(b) Discuss the relationship between water activity and microbial growth in food preservation.

17. (a) Define gelatinization and explain the factors affecting the gelatinization of starch.

Or

(b) Describe the process of retrogradation in starch and its impact on food texture.

18. (a) Explain gluten formation and the factors affecting its development in wheat-based products.

Or

(b) Discuss the impact of heat on protein denaturation and its applications in food processing.

19. (a) Explain the process of winterization and its significance in fat and oil processing.

Or

(b) Describe the effects of oxidation on fats and the methods used to prevent oxidative rancidity.

20. (a) Discuss the role of volatile compounds in cooked vegetables and their impact on flavour.

Or

(b) Explain the difference between water-soluble and fat-soluble plant pigments, with examples.

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C–7936

Sub. Code
96315

B.Sc. DEGREE EXAMINATION, APRIL 2026.

First Semester

Nutrition and Dietetics

FOOD MICROBIOLOGY

(2023 onwards)

Duration : 3 Hours **Maximum : 75 Marks**

Part A (10 × 1 = 10)

Answer **all** questions.

1. IMF stands for

   (a) Inner Moisture

   (b) Intermediate Moisture Foods

   (c) Inconspicuous Moisture Foods

   (d) Inane Moisture Foods

2. Bacteria that are able to survive Pasteurization temperature are called _____

   (a) Halotolerant bacteria

   (b) Thermophilic bacteria

   (c) Thermoduric bacteria

   (d) Osmophilicbacteria

3. The most spoilage bacteria grow at _____

   (a) Acidic pH (b) Neutral pH

   (c) Alkaline pH (d) All of the above

4. Which of the following is not considered to be a nutrient in food?

(a) Lipids (b) Protein

(c) Water (d) Minerals

5. What is the primary role of pasteurization in food processing?

(a) Eliminate all microorganisms

(b) Preserve color and texture

(c) Reduce the microbial load without affecting the quality significantly

(d) Freeze the food for long-term storage

6. Pasteurization is a method of preservation of

(a) Paneer (b) Beverage

(c) Vegetables (d) Milk

7. Which of the following is responsible for a musty or earthy flavor?

(a) *Actinomycetes*

(b) *Flavobacterium*

(c) Both (a) and (b)

(d) *Psevdomonas syncyanea*

8. Vacuum packaged meats are spoiled by

(a) *B.thermosphacta*

(b) *lactobacilli*

(c) Both (a) and (b)

(d) None of these

9. _____ bacteria grow best within the temperature range of 45°C – 55 °C.

(a) Mesophilic (b) Thermophilic

(c) Psychrophilic (d) All above

10. Tyndallization is more reliable than _____

(a) Sterilization (b) Pasteurization

(c) Blanching (d) Canning

Part B (5 × 5 = 25)

Answer all questions, choosing either (a) or (b).

11. (a) Write a short note on the contributions of Alexander Fleming to microbiology.

Or

(b) Compare the structural differences between bacteria and viruses.

12. (a) How do pH and water activity impact microbial growth in food?

Or

(b) Discuss the role of temperature and gaseous atmosphere in microbial growth and food preservation.

13. (a) How does microbial spoilage occur in milk and milk products?

Or

(b) Discuss the common preservation techniques used for milk and milk products.

14. (a) How do microorganisms affect the quality of sugar and sugar products?

Or

(b) Discuss the preservation techniques used for sugar and sugar products.

15. (a) Describe the microbial fermentation process in soy-based foods and sauerkraut.

Or

(b) What is microbial biomass? Explain its significance in food production.

Part C (5 × 8 = 40)

Answer all questions, choosing either (a) or (b).

16. (a) Define microbiology and discuss its historical development with mention the key contributions.

Or

(b) Describe the general morphology of microorganisms, including bacteria, fungi, and viruses.

17. (a) Explain the intrinsic factors affecting microbial growth in food with examples.

Or

(b) Describe the extrinsic factors influencing microbial growth in food and their impact on food preservation.

18. (a) Explain the microbial spoilage of vegetables, fruits, and milk products.

Or

(b) Describe the preservation methods used for canned foods, meat, and poultry.

19. (a) Explain the microbial spoilage of cereal and cereal products and discuss their preservation methods.

Or

(b) Describe how sugar and sugar products undergo microbial spoilage and the techniques used for their preservation.

20. (a) Explain the role of microorganisms in the fermentation of curd, cheese, and alcoholic beverages.

Or

(b) Discuss about microbial biomass and its applications in the food industry.

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C–7937

Sub. Code
96317

B.Sc. DEGREE EXAMINATION, APRIL 2026.

First Semester

Nutrition and Dietetics

FUNDAMENTALS OF BIOCHEMISTRY

(2023 onwards)

Duration : 3 Hours **Maximum : 75 Marks**

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following is a 39-residue hormone of the anterior pituitary gland?

   (a) Glucagon (b) Bradykinin

   (c) Corticotropin (d) Insulin

2. Which of the following statements is correct about column chromatography?

   (a) Resolution improves as column length increases

   (b) Mobile phase is a porous solid material kept in the column with appropriate chemical characteristics

   (c) Stationary phase is a buffered solution that percolates through the mobile phase

   (d) Large proteins exit the column faster than tiny proteins

3. Who deduced the double-helical structure of DNA?

(a) Watson and Francis Crick

(b) Frederick Sanger

(c) Anton van Leeuwenhoek

(d) Mendel

4. When the velocity of enzyme activity is plotted against substrate concentration, which of the following is obtained?

(a) Straight line with negative slope

(b) Straight line with positive slope

(c) Parabola

(d) Hyperbolic curve

5. Which of the following catalyzes the reversible degradation of 2-phosphoglycerate to phosphoenolpyruvate?

(a) Trypsin (b) Enolase

(c) Chymotrypsin (d) Hexokinase

6. Which of the following enzyme catalyzes a reaction that introduces reduced nitrogen into cellular metabolism?

(a) Bacterial dinitrogenase reductase

(b) Phosphatase

(c) Bacterial glutamine synthase

(d) Bacterial dinitrogenase oxidase

7. Which of the following is an example of epimers?

(a) Mannose & Glucose

(b) Glucose & Ribose

(c) Galactose & Mannose

(d) Glucose & Galactose

8. Which of the following are important for white blood cell recognition?

(a) Glycoproteins

(b) Glycosaminoglycans

(c) Glycolipids

(d) Proteoglycans

9. Arrangement of nucleotides in DNA can be seen using which of the following instruments?

(a) Electron microscope

(b) Light microscope

(c) X-Ray crystallography

(d) Ultracentrifuge

10. Which of the following involves carrying genetic information from DNA for protein synthesis?

(a) sn-RNA (b) r-RNA

(c) m-RNA (d) t-RNA

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) What are the primary functions of carbohydrates in the body? How does the body store excess carbohydrates for later use?

Or

(b) How are lipids classified based on their structure? What are the main types of lipids found in the human body?

12. (a) What are structural polysaccharides and how do they differ from storage polysaccharides?

Or

(b) What are phospholipids and how do they differ from other lipids like triglycerides?

13. (a) Define Km and explain the effect of substrate concentration on enzyme activity.

Or

(b) How many nucleotides are in a codon, and what is its significance?

14. (a) Explain about diagnostic and therapeutic uses of enzymes.

Or

(b) What are prostaglandins, and what role do they play in the body?

15. (a) Justify : The Induced fit hypothesis.

Or

(b) What is an osazone, and how is it formed? What is the significance of osazone formation in identifying monosaccharides?

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain in detail about the structure and properties of starch.

Or

(b) Discuss briefly about the structure and functions of three biochemically important disaccharides.

17. (a) How are proteins classified based on their biological functions?

Or

(b) What is albumin, and where is it primarily synthesized in the body? How does albumin help in maintaining fluid balance between blood vessels and surrounding tissues?

18. (a) Write a short note on the isoelectric pH of protein and its importance.

Or

(b) How are plasma proteins classified, and what are the main types? What is the role of plasma proteins in maintaining the osmotic pressure of blood?

19. (a) What is the role of post-translational modifications in the formation of nonstandard amino acids?

Or

(b) Define enzyme inhibition. Explain in detail the different types of inhibitions with suitable examples.

20. (a) What are the major factors that influence enzyme activity? Why do enzymes function as biological catalysts?

Or

(b) Where does transcription occur in prokaryotic and eukaryotic cells? What is the role of RNA polymerase in transcription?

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C–7938

Sub. Code
96323

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Second Semester

Nutrition and Dietetics

PRINCIPLES OF NUTRITION

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which method is used to measure energy value of food?
   (a) Thermometer (b) Bomb calorimeter
   (c) Glucometer (d) Manometer
2. The unit of energy in human nutrition is
   (a) Joule (b) Watt
   (c) Kilocalorie (d) Volt
3. Role of dietary fibre is to
   (a) Increase BMR
   (b) Prevent constipation
   (c) Build protein
   (d) Absorb calcium
4. The measure of protein quality using weight gain is
   (a) PER (b) BMI
   (c) TDEE (d) BMR

5. Dehydration may lead to

(a) Increased bone mass

(b) Fat loss

(c) Water imbalance

(d) Improved digestion

6. A major function of fat is

(a) Blood clotting

(b) Energy storage

(c) Vitamin C synthesis

(d) DNA formation

7. Deficiency of Iodine causes

(a) Osteoporosis (b) Anaemia

(c) Goitre (d) Night blindness

8. Sodium and potassium help in

(a) Water balance and nerve transmission

(b) Digestion

(c) Protein synthesis

(d) Bone building

9. A micro mineral among these is

(a) Phosphorus (b) Sodium

(c) Zinc (d) Calcium

10. Scurvy is caused by deficiency of

(a) Vitamin D (b) Vitamin A

(c) Vitamin B12 (d) Vitamin C

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Give the definition of basal metabolic rate (BMR) and factors affecting BMR.

Or

(b) What are the different methods for determining energy value of food?

12. (a) Describe the nutritional classification and functions of carbohydrates.

Or

(b) Short note on the classification of proteins and functions of amino acids.

13. (a) Write the functions and sources of essential fatty acids.

Or

(b) Discuss the role of water in the human body.

14. (a) Classify minerals. Write any three general functions of minerals.

Or

(b) Short note on iron and iodine sources, functions, and deficiency.

15. (a) Explain the sources and deficiency symptoms of vitamins A and D.

Or

(b) Write about any three water-soluble vitamins their functions and deficiency effects.

Part C

(5 × 8 = 40)

Answer **all** the questions, choosing either (a) or (b).

16. (a) Define energy. Describe the methods used to determine energy requirements.

Or

(b) Explain the concept of energy balance. Discuss the components of energy expenditure and , their significance in nutritional planning.

17. (a) Classify carbohydrates. Explain their digestion, absorption and functions on health.

Or

(b) Discuss protein quality evaluation methods and the role of proteins in body functions.

18. (a) Describe the nutritional classification and functions of lipids.

Or

(b) Explain the functions, distribution, and balance of water in the human body.

19. (a) Explain the roles, dietary sources, symptoms of calcium, phosphorus.

Or

(b) Write physiological roles and deficiency disorders of the minerals iron, iodine, zinc.

20. (a) Categorize the different types of vitamins.

Or

(b) Describe the functions of fat-soluble vitamins A, D, E, and K.

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C–7939	Sub. Code 96324

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Second Semester

Nutrition and Dietetics

NUTRITION THROUGH LIFE CYCLE

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Section A (10 × 1 = 10)

Answer **all** questions.

1. What is the primary objective of meal planning?
   (a) To create elaborate and fancy meals
   (b) To ensure the nutritional adequacy of the food we eat
   (c) To minimize food costs
   (d) To impress guests with culinary skills
2. Which of the following is NOT a factor to consider when planning meals?
   (a) Age of family members
   (b) Cultural preferences
   (c) Number of courses in a meal
   (d) Time and energy available for cooking
3. What types of foods should a lactating mother include in her diet to ensure adequate fiber intake?
   (a) Refined grains and sugary foods
   (b) Fruits, vegetables, and whole grains
   (c) Only fruits and vegetables
   (d) Only whole grains

4. What is the recommended dietary allowance (RDA) of protein for lactating mothers (0-6 months) according to the Indian Council of Medical Research (ICMR) 2010 guidelines?

(a) 54 g/day (b) 64 g/day

(c) 74 g/day (d) 84 g/day

5. Which of the following is the ideal food for newborns and young infants up to six months of age?

(a) Soy milk

(b) Rice cereal

(c) Breast milk

(d) Iron-fortified formula

6. What is the recommended age for introducing solid foods to an infant?

(a) 4 months (b) 6 months

(c) 8 months (d) 12 months

7. What is the main role of calcium in a child's body?

(a) Regulating blood sugar levels

(b) Maintaining strong bones and teeth

(c) Boosting the immune system

(d) Improving eyesight

8. Which vitamin is important for healthy vision and can be found in carrots and sweet potatoes?

(a) Vitamin C (b) Vitamin D

(c) Vitamin A (d) Vitamin B12

9. Which of the following is a key benefit of healthy eating for adults?

(a) Increased risk of heart disease

(b) Reduced energy levels

(c) Improved mood and mental clarity

(d) Weight gain

10. What is a common nutrient deficiency in adults, particularly as they age?

(a) Carbohydrates (b) Vitamin D

(c) Protein (d) Fiber

Section B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) List out the health benefits of meal planning.

Or

(b) What is the nutritional requirement of children?

12. (a) Which factors can influence our nutrient requirements?

Or

(b) Elaborate the stages of growth month-by-month in pregnancy.

13. (a) Illustrate the alternative feeding options for infants.

Or

(b) Describe the structure and function of mammary glands.

14. (a) Discuss the benefits and barriers related to breastfeeding.

Or

(b) Explore the introduction of solid foods into a toddler's diet.

15. (a) What is the difference between human and cow milk?

Or

(b) Explore the most important nutrition-related concerns during adolescence.

Section C (5 × 8 = 40)

Answer **all** the questions, choosing either (a) or (b).

16. (a) Summarize prenatal nutritional requirements and dietary recommendations.

Or

(b) Discuss the most important nutritional concerns during pregnancy.

17. (a) Enumerate the composition and properties of milk.

Or

(b) Discuss about the common causes of lactation failure.

18. (a) Explain how nutritional and lifestyle choices can affect current and future health.

Or

(b) Discuss the most important nutrition-related concerns during middle and old age.

19. (a) Discuss five important factors to consider when planning meals.

Or

(b) What are the factors influencing eating habits in school children?

20. (a) Discuss nutrition relate problems of schedule going children.

Or

(b) Explain different terminologies balanced nutrition, adequate nutrition, optimum nutrition good nutrition and malnutrition.

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C–7940

Sub. Code
96326

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Second Semester

Nutrition and Dietetics

HUMAN PHYSIOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Section A (10 × 1 = 10)

Answer **all** questions.

1. If a person with blood group B receives blood from a donor with group A, what will happen?
   (a) Nothing will happen
   (b) Blood will clot normally
   (c) Agglutination will occur
   (d) Immunity will improve

2. What is the average lifespan of a red blood cell in human circulation?
   (a) 10 days (b) 60 days
   (c) 120 days (d) 180 days

3. Which division of the autonomic nervous system is responsible for the "fight or flight" Response?
   (a) Central nervous system
   (b) Parasympathetic nervous system
   (c) Sympathetic nervous system
   (d) Somatic nervous system

4. How many _____ cranial nerves are there?

(a) 10 (b) 12

(c) 14 (d) 8

5. Which of the following cranial nerves is responsible for vision?

(a) Olfactory nerve (I)

(b) Optic nerve (II)

(c) Facial nerve (VII)

(d) Vagus nerve (X)

6. Which enzyme is secreted by the stomach to digest proteins?

(a) Amylase (b) Lipase

(c) Trypsin (d) Pepsin

7. Which of the following is NOT part of the urinary system?

(a) Ureter (b) Urethra

(c) Bladder (d) Gallbladder

8. Which gland _____ secretes insulin?

(a) Thyroid (b) Pituitary

(c) Pancreas (d) Adrenal

9. Which hormone controls the release of milk?

(a) Prolactin (b) Oxytocin

(c) Estrogen (d) Progesterone

10. Which endocrine gland is located in the neck?

(a) Pancreas (b) Thyroid

(c) Pituitary (d) Adrenal

Section B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the composition and functions of plasma in blood.

Or

(b) Describe the process of blood clotting and the role of platelets.

12. (a) Draw and label the structure and function of a neuron.

Or

(b) Short note on the structure and function of the eye.

13. (a) Explain the structure and function of respiratory organs.

Or

(b) Describe the anatomy of structure and function of human heart.

14. (a) Explain about process of urine formation.

Or

(b) What is the role of the pituitary gland? Name any four hormones it secretes and functions.

15. (a) Explain the menstrual cycle and mention the hormones involved reproductive systems.

Or

(b) Compare endocrine and exocrine glands with examples.

Section C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Describe the structure and functions of different types of white blood cells.

Or

(b) Explain the process of coagulation and the role of various factors involved in clotting.

17. (a) Explain the structure of the eye with a neat diagram. Describe the mechanism of vision.

Or

(b) Write a detailed note on the divisions of the nervous system and their respective functions.

18. (a) Describe the internal and external respiration processes.

Or

(b) Explain the cardiac cycle with the help of a diagram and discuss its phases.

19. (a) Explain the digestion and absorption of carbohydrates.

Or

(b) Describe the regulation of kidney function and the role of the hormones.

20. (a) Definition and diagram parts of the female reproductive system.

Or

(b) Write the structure, function and mechanisms action of pancreases.

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C–7941

Sub. Code
96333

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Third Semester

Nutrition and Dietetics

BASIC FOOD PROCESSING AND PRESERVATION

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which term refers to the range of methods used to prevent food spoilage and extend its availability?
   (a) Food presentation
   (b) Food preservation
   (c) Food conservation
   (d) Food enrichment
2. Which of the following is the most common cause of food spoilage?
   (a) Physical damage
   (b) Microbial growth
   (c) Addition of preservatives
   (d) Freezing
3. Which of the following cereal is commonly processed using roller milling?
   (a) Wheat (b) Rice
   (c) Sorghum (d) Pearl millet

4. Which of the following millets is commonly used in the production of popped or puffed products?

(a) Finger millet (b) Foxtail millet

(c) Pearl millet (d) Sorghum

5. Which enzyme is commonly used for coagulation in cheese-making?

(a) Amylase (b) Rennet

(c) Pepsin (d) Lactase

6. Which of the following dairy products is made by removing water from milk under vacuum?

(a) Cheese (b) Butter milk

(c) Evaporated milk (d) Ice cream

7. Cryogenic freezing uses which of the following gases?

(a) Oxygen (b) Liquid nitrogen

(c) Carbon dioxide (d) Ammonia

8. Who invented spray dryer?

(a) Samuel Percy (b) Fritz Winkler

(c) John A (d) Jacques-Arsended'Arsonva

9. Which of the following foods is preserved using high sugar concentration?

(a) Pickles (b) Jam and jellies

(c) Cheese (d) Sauerkraut

10. Which of the following is a by-product of fermentation that helps preserve food?

(a) Carbon dioxide

(b) Water

(c) Alcohol and organic acids

(d) Starch

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write the importance food preservation.

Or

(b) Discuss the types food spoilage.

12. (a) Write down the processed food products.

Or

(b) Differentiate between blended flour and fortified flour in milling sectors.

13. (a) Explain the role of milk processing and its effect on milk quality.

Or

(b) Write down the types of probiotic milk products.

14. (a) Describe the methods of spray drying and canning.

Or

(b) Explain the methods of freezing and its advantages.

15. (a) Explain the importance FPO Specification in food industry.

Or

(b) Name two chemical preservatives and explain their mode of action.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Elaborate the principles of different food processing.

Or

(b) Discuss the basic principles and method of food preservation.

17. (a) Describe the different methods of wheat processing and their application in the food industry.

Or

(b) Discuss the industrial applications of millets in food product development.

18. (a) Describe the process of cheese making and explain the different types of cheese.

Or

(b) Elaborate the indigenous milk products.

19. (a) Briefly explain the different types drying methods in food industry.

Or

(b) Differentiate between canning and sterilization.

20. (a) Explain how fermented foods improve gut health and overall nutrition.

Or

(b) Discuss the impact of sugar, salt and preservatives on food preservation and human health.

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C–7942	Sub. Code 96334

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Third Semester

Nutrition and Dietetics

FOOD STANDARDS AND QUALITY CONTROL

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is the purpose of quality control measures in food production?

   (a) To ensure the safety of foods

   (b) To improve the nutritional value of foods

   (c) To enhance the sensory characteristics of foods

   (d) All of the above

2. Which one of the following is not in a quality checking?

   (a) Sensory attributes

   (b) Shelf-Life

   (c) Both (a) and (b)

   (d) None of the above

3. Enzyme responsible for apple browning

   (a) Tyrosinase (b) Oxidase

   (c) Phenolase (d) Catecholase

4. Which of the following food additives is used as a stabilizer?

(a) Guar gum (b) Carrageenan

(c) Xanthan gum (d) All of the above

5. What is the purpose of sensory evaluation in food quality assessment?

(a) To determine the nutritional value of a food

(b) To detect the contaminants in a food

(c) To assess the texture, taste, and aroma of a food

(d) To evaluate the packaging of a food

6. Discriminative and communicative panel should consist of about

(a) 35 (b) 15

(c) 25-30 (d) 28-35

7. The presence of harmful foreign substances in food

(a) Contamination (b) Adulteration

(c) Adulterants (d) toxins

8. The Codex maximum limit for patulin in apple juice is _____ μg/L.

(a) 30 (b) 40

(c) 50 (d) 45

9. Headquarters of AGMARK

(a) Chennai (b) Mumbai

(c) New Delhi (d) Hydrabad

10. FSSAI functions under

(a) Ministry of Health & Family welfare

(b) Ministry of consumer affairs and public distribution

(c) Ministry of Agriculture

(d) Ministry of Home affair

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Write about the quality checking of processed foods.

Or

(b) Write about the quality deterioration of foods.

12. (a) What are the specifications for fruit products?

Or

(b) Elucidate the food specifications for milk products.

13. (a) Write a short notes on the types of sensory test.

Or

(b) Explain the types of objective evaluation.

14. (a) State the about mushroom poisoning.

Or

(b) Write about the measures to control food adulteration.

15. (a) Explain about the AGMARK.

Or

(b) Discuss on BIS.

Part C (5 × 8 = 40)

Answer **all** the questions, choosing either (a) or (b).

16. (a) What are the simple techniques used to quality checking of fruits and vegetables? Explain in detail.

Or

(b) Give an account on the simple techniques used to quality checking of cereals and pulses.

17. (a) Give an account on the quality control measures.

Or

(b) Elucidate about the food specifications for starchy foods.

18. (a) Elaborate the procedure of subjective assessment.

Or

(b) Enumerate about objectives, requirements and different tests of objective evaluation.

19. (a) List the naturally occurring toxin in foods? Explain in detail.

Or

(b) Discuss the toxic minerals in food and water.

20. (a) Describe about the food standards and food laws.

Or

(b) Discuss the role of FSSAI in food standards and quality control.

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C–7943	Sub. Code 96336

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Third Semester

Nutrition and Dietetics

NUTRITION FOR HEALTH AND FITNESS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What component of fitness refers to the ability of the heart and lungs to supply oxygen during Sustained physical activity?

   (a) Muscular strength

   (b) Cardiovascular endurance

   (c) Flexibility

   (d) Agility

2. Which nutrient is essential for muscle recovery after exercise?

   (a) Balance (b) Coordination

   (c) Agility (d) Reaction time

3. Which macronutrient is the primary source of energy during high intensity exercise?

   (a) Protein (b) Carbohydrate

   (c) Fats (d) Vitamins

4. Which vitamin is essential for red blood cell production and oxygen transport in athletes?

(a) Vitamin C (b) Vitamin D

(c) Vitamin B12 (d) Vitamin A

5. What is the primary energy system used during aerobic training?

(a) Phosphagen system

(b) Glycolytic system

(c) Oxidative system

(d) Lactic acid system

6. Which physiological parameter is commonly measured using a bicycle ergometer?

(a) Body mass index (BMI)

(b) Maximum oxygen uptake (VO2 max)

(c) Blood glucose levels

(d) Bone density

7. What is the medical term for high blood pressure, often linked to poor diet and inactivity?

(a) Hypotension (b) Hypertension

(c) Hyperglycemia (d) Hypoglycemia

8. Which eating disorder involves consuming large amounts of food in a short time without purging?

(a) Anorexia nervosa

(b) Bulimia nervosa

(c) Binge-eating disorder

(d) Orthorexia

9. Which organelle is primarily responsible for producing reactive oxygen species (ROS) during exercise?

(a) Golgi apparatus (b) Nucleus

(c) Ribosome (d) Mitochondria

10. What type of stress management technique focuses on deep breathing and mindfulness?

(a) Strength training

(b) Meditation

(c) High intensity interval training

(d) Watching TV

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Write down the types of physical fitness.

Or

(b) Describe the benefits of diet for exercise.

12. (a) Detail about the Food pyramid (FAO/WHO 2005).

Or

(b) Explain composition and nutritional importance of protein.

13. (a) Write the differentiate between aerobic and anaerobic training.

Or

(b) Describe the importance of functional trainer.

14. (a) Explain the role of junk food consumption in the development of eating disorder (bulimia).

Or

(b) Describe the health consequences of Underweight.

15. (a) Discuss the oxidative stress in exercise.

Or

(b) Explain the stress management techniques.

Part C

(5 × 8 = 40)

Answer **all** the questions, choosing either (a) or (b).

16. (a) Elaborate the components of physical fitness.

Or

(b) Write down the principles and types of exercise.

17. (a) Briefly explain nutritional importance of Macronutrients.

Or

(b) Write down the nutritional classification of 11 food groups.

18. (a) Discuss the benefits of fitness training and gadgets for measuring motorized treadmill.

Or

(b) Write the importance of stretch training physical activity.

19. (a) Explain how a sedentary lifestyle contributes to cardiovascular disease and discuss preventive measure.

Or

(b) Discuss the causes, symptoms and prevention of obesity as a result of unhealthy dietary habits and sedentary lifestyle.

20. (a) Discuss the importance of a balanced diet in maintaining antioxidant defense and, Preventing oxidative damage in athletes.

Or

(b) Explain the classification Vitamins.

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C–7944

Sub. Code
96343

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Fourth Semester

Nutrition and Dietetics

DIETETICS – I

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is the primary goal of diet therapy?

   (a) to promote weight gain

   (b) to manage or prevent diseases

   (c) to encourage unhealthy eating habits

   (d) to increase calorie intake

2. A "soft diet" is often recommended for patients who

   (a) Have difficulty chewing or swallowing

   (b) Are on a low-sodium diet

   (c) Need to lose weight

   (d) Have diabetes

3. In severe PEM, a common vitamin deficiency is

   (a) Vitamin A (b) Vitamin B12

   (c) Vitamin D (d) Vitamin K

4. Severe Vitamin A deficiency can lead to

(a) Rickets

(b) Scurvy

(c) Xerophthalmia and corneal ulcers

(d) Beri-Beri

5. Which of the following is NOT typically recommended as part of a gastritis-friendly diet?

(a) Fruits and vegetables

(b) Lean meats

(c) Spicy foods

(d) Whole grains

6. A good source of probiotics that may help with peptic ulcers is

(a) Spicy chili peppers

(b) Yogurt

(c) Coffee

(d) Fried chicken

7. _____ is a common symptom of advanced fatty liver disease?

(a) Frequent nosebleeds

(b) Jaundice

(c) Severe stomach cramps

(d) Persistent headaches

8. Which of the following is a common cause of cirrhosis?

(a) Hepatitis A

(b) Hepatitis B and C

(c) Alcoholic liver disease

(d) All of the above

9. What is a key consideration when planning meals for children with special needs?

(a) Ensuring a balanced intake of all nutrients

(b) Prioritizing high-calorie, high-fat foods

(c) Limiting the variety of foods to make mealtime easier

(d) Focusing solely on protein intake

10. Which of the following is a common nutritional concern for children with cerebral palsy?

(a) Obesity due to decreased physical activity

(b) Iron deficiency anemia due to poor absorption

(c) Vitamin D deficiency due to limited sun exposure.

(d) All of the above

Part B

$(5 \times 5 = 25)$

Answer **all** the questions, choosing either (a) or (b).

11. (a) Write the objectives of diet therapy.

Or

(b) Write the principles of nutrition care process.

12. (a) Describe the dietary modification for PEM.

Or

(b) Discuss dietary modification and diet planning for iron deficiency anaemia.

13. (a) Write about the causes and pathogenesis of gastritis.

Or

(b) Explain the dietary principles and diet plan for diarrheoa.

14. (a) Explain the pathogenesis, sign and symptoms of fatty liver disorder.

Or

(b) Dietary modification for liver cirrhosis.

15. (a) Explain about disabilities.

Or

(b) Discuss the nutritional care for the children with autism.

Part C (5 × 8 = 40)

Answer **all** the questions, choosing either (a) or (b).

16. (a) Explain about food exchange list and portion control.

Or

(b) Extent the basic concept and procedure of oral and tube feeding.

17. (a) Explain about the dietary principles, Diet planning and preventive measure of vitamin A deficiency.

Or

(b) Summarize the causes and diet plan for febrile condition.

18. (a) Write about the condition of GERD and their diet plan.

Or

(b) Summaizes the condition of peptic ulcer and their dietary modifications.

19. (a) Discuss about Hepatitis and its dietary modifications.

Or

(b) Explains about the condition of cholelithiasis and its diet plan.

20. (a) Explain about attention deficit hyperactivity disorder.

Or

(b) Discuss the nutritional care for the children with Cerebral palsy.

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C–7945

Sub. Code
96344

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Fourth Semester

Nutrition and Dietetics

FOOD SERVICE MANAGEMENT

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which foodservice system is characterized by the preparation of food close to the point of service?

   (a) Conventional (b) Ready-prepared

   (c) Assembly-serve (d) Commissary

2. Which of the following means "Table of the host" menu?

   (a) Table d'hote menu

   (b) A la carte menu

   (c) Combination menu

   (d) Buffet

3. What is a primary benefit of using a centralized purchasing system in a large organization like a hospital?

   (a) increased flexibility in sourcing

   (b) reduced administrative overhead

   (c) streamlined ordering process and cost control

   (d) direct access to local farmers

4. What is the primary purpose of the receiving process in a food service operation?

   (a) To ensure the quality and quantity of goods match the order specifications

   (b) To minimize storage space utilization

   (c) To expedite the food preparation process

   (d) To reduce the cost of goods purchased

5. Which of the following is NOT a primary function of food management?

   (a) Planning (b) Organizing

   (c) Controlling (d) Budgeting

6. Which of the following is NOT a responsibility of a food service manager?

   (a) Managing inventory and ordering supplies

   (b) Hiring, training, and supervising staff

   (c) Developing and implementing marketing strategies

   (d) Performing all cooking duties

7. Which of the following is a key aspect of inventory management for a food service manager?

   (a) Ordering excessive amounts of food to avoid shortages

   (b) Keeping a detailed record of all inventory items and their usage

   (c) Ignoring spoilage and waste

   (d) Relying solely on the chefs memory for ordering needs

8. A tool for controlling food costs is

   (a) Menu engineering

   (b) Waste reduction

   (c) Ingredient standardization

   (d) All of the above

9. What is the purpose of a food safety management system (FSMS)?

(a) Maximize profits

(b) Ensure food safety

(c) Increase marketing

(d) Reduce labor costs

10. Which of the following is a technique for managing food waste?

(a) Portion control (b) Over-production

(c) Improper storage (d) Inadequate staff training

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write a short note on conventional systems and assembly service system.

Or

(b) Describe the salient features of tray service and portable service.

12. (a) Explain the duties and procedure of purchasing.

Or

(b) Enumerate the effective management of left over foods.

13. (a) Write the definition and principles of management.

Or

(b) Describe the styles of leadership.

14. (a) Explain the criteria for selection of personnel.

Or

(b) Explain about the cost concepts of financial management.

15. (a) How will you maintain personal hygiene?

Or

(b) Describe the importance of pest control and waste disposal in food services.

Part C

(5 × 8 = 40)

Answer **all** the questions, choosing either (a) or (b).

16. (a) Classification of food service according to method of processing.

Or

(b) Explain about the types of menu.

17. (a) Explain the Characteristics and methods of purchasing.

Or

(b) Discuss about storing and issuing.

18. (a) Explain the Characteristics of a Good Leader.

Or

(b) Briefly explain types and theories of organization.

19. (a) Discuss the labor laws governing food service establishment.

Or

(b) Discuss about book keeping and accounting systems of book keeping.

20. (a) Write a detailed note on sanitary procedure following during food handling.

Or

(b) Describe about GHP and GMP in food industry.

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C–7946	Sub. Code
	96345

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Nutrition and Dietetics

FOOD PRODUCT DEVELOPMENT AND MARKETING STRATEGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following is a psychological factor influencing food consumption patterns?

   (a) Income

   (b) Taste preferences

   (c) Religious belief

   (d) Cultural background

2. Trends in food consumption are important because they:

   (a) Reduce food costs

   (b) Help design roads

   (c) Guide product development decision

   (d) Promote weight loss

3. Which of the following is an example of RTE food?

(a) Instant noodles

(b) Wheat flour

(c) Raw vegetables

(d) Milk

4. Product specifications are important in development because they:

(a) Increase taxes

(b) Ensure consistency and quality

(c) Delay launch

(d) Reduce consumer demand

5. IMF foods are designed primarily for:

(a) Growing children

(b) Athletes

(c) Infants and young children

(d) The elderly

6. Which of the following is a functional food?

(a) Sugar

(b) White bread

(c) Probiotic yogurt

(d) Ice cream

7. Which of these methods is used for shelf-life testing of packaged food?

(a) SWOT analysis

(b) Enzyme digestion

(c) Microbial and sensory testing

(d) Food photography

8. Portion size and serving control are evaluated under:

(a) Food design

(b) Standardization

(c) Pricing

(d) Branding

9. Which of the following is part of financial institutions providing food business funding?

(a) WHO

(b) Local vendors

(c) Central and State Government banks

(d) Food bloggers

10. SWOT analysis is primarily used for:

(a) Product packaging

(b) Analysing market trends and internal capabilities

(c) Cooking processes

(d) Customer complaints

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) What preparation is necessary for the consumer for screening food products?

Or

(b) Describe the role of social change new product development.

12. (a) Write role of food components in product development.

Or

(b) Discuss the principles and purpose of new food product development.

13. (a) Short notes on the RTE & RTS, IMF foods importance in today's lifestyle.

Or

(b) What are nutraceuticals? Mention their health benefits with examples.

14. (a) Explain the sensory testing methods used in evaluating new food products.

Or

(b) Write a note on shelf-life testing and its significance in food packaging.

15. (a) Briefly explain the role of institutional support and financial agencies in food entrepreneurship.

Or

(b) Describe the importance of market research in launching a new food product.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b)

16. (a) Describe the economical, psychological and sociological dimension food consumption pattern behaviour.

Or

(b) Describe various factors affecting consumer food choices. How to develop new products?

17. (a) Explain the scope and importance of the food processing industry in India.

Or

(b) Describe the step-by-step approach to food product development.

18. (a) Discuss the formulation and significance of therapeutic diets in recipe development.

Or

(b) Explain the shelf-life evaluation methods, shelf-life assessment processed foods.

19. (a) Define nutrient analysis. methods used to test carbohydrate, protein, and fat content in food products.

Or

(b) Discuss the factors to consider in packaging design for different types of food products, including eco-friendly materials.

20. (a) Describe the steps involved in pricing and budgeting a new food product. How do production cost ,and marketing affect final pricing?

Or

(b) What is SWOT analysis? Explain it

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C–7947	Sub. Code 96347

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Nutrition and Dietetics

BAKERY AND CONFECTIONARY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The bakery industry mainly comes under which type of food industry segment?

   (a) Dairy (b) Cereal-based

   (c) Meat-based (d) Fermentation-based

2. What is the primary function of baking powder in batters?

   (a) Flavor enhancer (b) Coloring agent

   (c) Leavening agent (d) Binding agent

3. Which ingredient helps in yeast fermentation by serving as food for the yeast?

   (a) Salt (b) Fat

   (c) Sugar (d) Baking powder

4. Role of eggs in baking includes all EXCEPT:

   (a) Structure (b) Color

   (c) Leavening (d) Fermentation

5. Which of the following is a major equipment in a bakery?

(a) Thermometer (b) Oven

(c) Measuring cup (d) Sieve

6. What is the primary purpose of a layout plan in a bakery unit?

(a) Attract customers

(b) Increase product cost

(c) Ensure workflow efficiency and hygiene

(d) Promote sales through discounts

7. Which of the following is used in cake decoration?

(a) Dough conditioner

(b) Fondant and frosting

(c) Gluten

(d) Salt

8. A good quality loaf of bread should have:

(a) Uneven texture

(b) Dense crumb

(c) Uniform volume and well-developed crust

(d) Sticky interior

9. Which of the following is the primary ingredient in chocolate?

(a) Cocoa butter

(b) Milk solids

(c) Sugar

(d) Cocoa solids

10. Fondant is a type of:

(a) Toffee (b) Fudge

(c) Soft candy (d) Hard-boiled candy

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Write about the structure and composition of wheat.

Or

(b) Describe the methods of making batters.

12. (a) Explain the selection methods of packaging material.

Or

(b) Describe the role of milk and egg in baking.

13. (a) Enumerate the major equipment of bakery unit.

Or

(b) What are factors to be considered for setting up a bakery unit.

14. (a) Explain the basic processes of cookie making

Or

(b) Differentiate the various types of cakes

15. (a) How will you make hard boiled candies?

Or

(b) How will you plan to prepare special confectionary foods?

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b)

16. (a) Explain the physical and chemical changes during baking

Or

(b) Describe the classification of baked foods.

17. (a) Explain the types and properties of flour.

Or

(b) Discuss the role and importance of major baking ingredients with examples.

18. (a) Explain the equipment needed for starting a small bakery with their uses.

Or

(b) Discuss the construction and working of conventional vs modern ovens?

19. (a) Describe the bread making process and discuss the qualities of a good loaf

Or

(b) Discuss the sensory evaluation of baked products (objective and subjective).

20. (a) Explain the functions of water during exercise

Or

(b) Describe the role of fluid & electrolytes during exercise.

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C–7948	Sub. Code 96351

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Fifth Semester

Nutrition and Dietetics

DIETETICS – II

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The test for checking mean plasma glucose concentration over the previous 8-10 weeks is:
   (a) Hemoglobin A1c (b) OGTT
   (c) Fructosamine test (d) Fasting plasma glucose

2. People with high blood pressure should also avoid eating:
   (a) Egg yolks (b) Ice cream
   (c) Fatty meats (d) All of the above

3. Which of the following is not a post renal cause of renal failure?
   (a) BPH (b) Urethra obstruction
   (c) Prostatic cancer (d) Congestive cardiac failure

4. In distinguishing acute from chronic renal failure, which of the following is the most reliable evidence of CKD?
   (a) History of increased serum creatinine
   (b) History of increase BUN
   (c) Above normal plasma sodium
   (d) Above normal plasma calcium

5. The first symptom of rheumatoid arthritis (RA) is most often:
   (a) Pain in the joints of the hands and feet
   (b) Pain in the hips and shoulders
   (c) Headache
   (d) All of the above

6. Accumulation of which of the following results in gout
   (a) Synovial fluid (b) WBC
   (c) Uric acid (d) Blood plasma

7. What gives people the best possible chance of survival?
   (a) Chemotherapy
   (b) Cancer screenings
   (c) Healthy lifestyle choices
   (d) Early diagnosis

8. In individuals with HIV, opportunistic infections are:
   (a) More frequent (b) Less frequent
   (c) Non-existent (d) None of the above

9. Which one of the following foods is not the functional food?
   (a) Dietary fiber
   (b) Probiotics
   (c) Omega-3 Polyunsaturated fatty acids
   (d) Pills

10. What is the essential process in diet counselling?
   (a) Prescription of medication
   (b) Goal setting
   (c) Menu Planning
   (d) Conducting physical examination

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write the complications and dietary modifications for pancreatic disorders.

Or

(b) Write down the dietary modifications for hypertension.

12. (a) Brief note on Nephrosis.

Or

(b) Explain about acute renal failure.

13. (a) Write down about the food intolerance.

Or

(b) Write a short note on dental caries.

14. (a) Give short note on cancer therapy.

Or

(b) Explain the nutritional care for patients with cancer.

15. (a) Write the uses of nutraceuticals in human health.

Or

(b) What are the attributes of a successful counsellor?

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain about IDDM and NIDDM and give a model diet plan for the same.

Or

(b) State about the disease of congestive heart failure and its dietary modifications.

17. (a) Write the diet plan for dialysis condition.

Or

(b) Discuss the causes, pathogenesis and dietary modifications of chronic renal failure.

18. (a) Write down the different stages of burns. And its dietary modifications.

Or

(b) Explain the different test for food allergy.

19. (a) Explain the nutritional management system with example for opportunistic infected persons.

Or

(b) What is ART? Explain in detail.

20. (a) Discuss the role of nutraceuticals in the prevention and treatment of cardiovascular diseases.

Or

(b) Elucidate the process and methods of dietary counselling and its guidelines.

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C–7951	Sub. Code 96354B

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Fifth Semester

Nutrition and Dietetics

PAEDIATRIC DIETETICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The prevalence of overweight children is:
   (a) 16.90% (b) 21.40%
   (c) 31.70% (d) 41.70%

2. Accumulation of fluids observed on the face in:
   (a) Mild Kwashiorkor
   (b) Moderate Kwashiorkor
   (c) Severe Kwashiorkor
   (d) Marasmic Kwashiorkor

3. Which is the precursor of niacin
   (a) Tryptophan (b) Leucine
   (c) Isoleucine (d) Tyrosine

4. Milk is rich in all the following except
   (a) Sodium (b) Iron
   (c) Phosphate (d) Calcium

5. Exposures that produce malformations in embryos or fetuses.

(a) Morbidity

(b) Teratogenic

(c) Congenital abnormality

(d) Motility

6. In a child the brain growth that takes place during infancy is:

(a) 70% (b) 30%

(c) 10% (d) 15%

7. _____ g/kg/day protein is needed by an infant of 6-12 months old:

(a) 2.2 (b) 1.6

(c) 0.8 (d) 1.2

8. Fat-soluble drugs may accumulate in the body & increase the risk of toxicity in _____.

(a) Elderly (b) Infants

(c) Underweight (d) Teenagers

9. Which Vitamin favors the absorption of Iron?

(a) Vitamin C (b) Vitamin A

(c) Vitamin D (d) Vitamin E

10. Congenital hypothyroidism presents in:

(a) Fetus (b) Adults

(c) Children (d) Pregnant females

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) What are the consequences of deficiencies in zinc, protein, and vitamin D?

Or

(b) Describe the growth development charts for infants.

12. (a) Write about the importance of breastfeeding for infants.

Or

(b) Mention about primary and secondary malnutrition in children.

13. (a) List out the protein deficiency diseases in children.

Or

(b) How to assess the malnutrition condition of infants?

14. (a) What are the common signs of Autism? Briefly explain.

Or

(b) Write about the important role of paediatric nutrition.

15. (a) How to relate the growth and development of infants?

Or

(b) Describe the usage of artificial feeding for infants.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain the factors involved in autism and its nutritional management.

Or

(b) How to assess the mental health of infants?

17. (a) Write about the major metabolism-related disorder in infants.

Or

(b) Write the comparison of natural breast and artificial feeding to infants.

18. (a) List out the ideal food for newborns and young infants up to six months old.

Or

(b) Mention the newborn as part of the routine immediately assessed procedure after delivery.

19. (a) What are the consequences and management of iodine deficiency?

Or

(b) Explain that Phenylketonuria is a genetic disorder impairing the metabolism.

20. (a) Discuss the age of six months infants ideal food for newborns and young infants.

Or

(b) Detail about the measures of growth and nutritional development of infants.

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C–7954

Sub. Code
96361

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Nutrition and Dietetics

BIO-PROCESS TECHNOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following is a downstream process in bioprocess technology?

   (a) Fermentation

   (b) Sterilization

   (c) Product purification

   (d) Inoculum preparation

2. Integrated bioprocesses include which of the following?

   (a) Upstream only

   (b) Downstream only

   (c) Both upstream and downstream

   (d) None of the above

3. Which of the following is used for anaerobic fermentation?

(a) Lactic acid bacteria

(b) Penicillium

(c) Cyanobacteria

(d) Nitrosomonas

4. Which bioreactor uses gas bubbles to enhance mixing?

(a) Stirred tank reactor

(b) Bubble column reactor

(c) Packed bed reactor

(d) Fluidized bed reactor

5. Which of the following factors influences enzyme kinetics?

(a) Light (b) pH

(c) Pressure (d) Gravity

6. The part of the bioreactor responsible for maintaining aseptic conditions is :

(a) Impeller (b) Cooling jacket

(c) Sparger (d) Air filter

7. The stoichiometry of microbial growth helps in :

(a) Designing media

(b) Predicting yield

(c) Measuring oxygen demand

(d) All of the above

8. Which term defines the efficiency of substrate conversion into biomass?

(a) Yield coefficient

(b) Specific growth rate

(c) Maintenance energy

(d) Doubling time

9. Which microorganism is commonly used in _____ yogurt production?

(a) *E.coli*

(b) *Saccharomyces cerevisiae*

(c) *Streptococcus thermophilus*

(d) *Clostridium botulinum*

10. Single cell protein is mainly obtained from :

(a) Yeasts and algae

(b) Animal cells

(c) Bacteria only

(d) Fungi only

Part B $(5 \times 5 = 25)$

Answer **all** the questions, choosing either (a) or (b).

11. (a) Explain any two major applications of bioprocesses in the food industry.

Or

(b) Differentiate between upstream and downstream processing with examples.

12. (a) Short note on any two types of fermenters with their specific applications.

Or

(b) Describe the role of aeration and agitation in fermentation processes.

13. (a) Explain the factors affecting enzyme activity in bioconversion reactions.

Or

(b) What is media sterilization? Why is it essential in enzyme-based bioprocesses?

14. (a) Explain the concept of yield coefficient and importance of bioprocess efficiency.

Or

(b) Define maintenance energy and describe its role in microbial growth systems.

15. (a) Describe the process of yogurt production and the microorganisms involved.

Or

(b) Write short notes on the following :

(i) Mushroom cultivation

(ii) Single Cell Protein.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Describe the flowchart of a complete bioprocess use the raw material input to final product packaging and significance.

Or

(b) Overview on the importance upstream processing in fermentation process.

17. (a) Write a neat diagram, aeration and agitation affect microbial growth in a bioreactor.

Or

(b) Short notes on any one type fermenter.

18. (a) Explain kinetics of thermodynamics enzymes.

Or

(b) Write the immobilization method, and application.

19. (a) Discuss the Calculate yield coefficient biomass and elemental balance in product formation.

Or

(b) Explain difference between aerobic and anaerobic organisms, impacts bioprocess design.

20. (a) Describe in detail the steps involved in curd production, and health benefits.

Or

(b) Discuss the nutritional advantages and limitations of using Single Cell Protein (SCP).

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C–7955

Sub. Code
96362

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Nutrition and Dietetics

FOOD SAFETY, SECURITY AND ETHICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is the primary goal of food safety?

   (a) Improve food taste

   (b) Prevent food spoilage

   (c) Prevent foodborne illnesses

   (d) Reduce cooking time

2. Which one is a major key components in hygiene practices is ————————.

   (a) Packaging

   (b) Temperature Control

   (c) Advertisement

   (d) Food colouring

3. Which of the following is a *biological* hazard in food?

(a) Glass shards

(b) Pesticide residues

(c) Salmonella bacteria

(d) Cleaning agents

4. Which of the following is an adverse health effect of chemical food hazards?

(a) Allergic reaction

(b) Choking

(c) Broken tooth

(d) Fever

5. Which of the following is an example of a food safety risk?

(a) Lack of marketing strategies

(b) Contaminated raw materials

(c) Seasonal food shortage

(d) Overproduction of grains.

6. Which of the following is the first step in food safety risk analysis?

(a) Risk management

(b) Risk communication

(c) Risk assessment

(d) Risk review

7. Which food standard label certifies the quality of agricultural products in India?

(a) FSSAI

(b) ISI

(c) AGMARK

(d) BIS

8. ISO 22000 is an international standard related to:

(a) Nutritional labelling

(b) Food safety management systems

(c) Agricultural subsidy

(d) Food advertising laws

9. What is meant by food adulteration?

(a) Improving food quality

(b) Removing harmful substances from food

(c) Adding substances to food to reduce its quality

(d) Preserving food for longer shelf life

10. Which of the following is not an ethical issue in the food industry?

(a) Mislabeling food products

(b) Food adulteration

(c) Ethical sourcing of ingredients

(d) Nutrient fortification

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the importance of food safety and hygiene in raw and cooked foods.

Or

(b) Describe any two temperature control methods used in the food industry

12. (a) Explain any three primary sources of food safety hazards.

Or

(b) Describe the health effects of physical and chemical food hazards

13. (a) Define food safety risks. Mention two types of risks.

Or

(b) Differentiate between risk assessment and risk analysis.

14. (a) Discuss the role of FSSAI in food safety.

Or

(b) Write a short note on ISO and its importance.

15. (a) Explain the term food adulteration with two examples.

Or

(b) Discuss the importance of proper storage temperature in the food industry.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Define food safety. Discuss the importance of temperature control in relation to foodborne illnesses.

Or

(b) Explain the nature of food items in terms of raw, cooked or undercooked meals and their impact on health.

17. (a) Discuss the characteristics of food safety hazards.

Or

(b) Explain the control measures used in food industries.

18. (a) Explain the process of risk management in food safety.

Or

(b) Describe the types of food safety risks and how they are managed.

19. (a) Describe the role of AGMARK and ISO in maintaining food quality and safety.

Or

(b) Explain the major food safety standards applicable in India.

20. (a) Describe the ethical and legal issues in the food industry with examples.

Or

(b) Explain the various components of ethics in the food industry, including medical record management and patient rights.

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C–7956

Sub. Code
96364A

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Nutrition and Diabetics

NUTRACEUTICAL

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following is an example of a non-nutritive substance?
   (a) carbohydrates
   (b) proteins
   (c) artificial sweeteners
   (d) Vitamins

2. Which of the following is an example of a functional food?
   (a) White rice
   (b) Fortified breakfast cereal
   (c) Refined sugar
   (d) Soda

3. Spirulina used as nutraceuticals is
   (a) Blue green algae
   (b) Red Algae
   (c) Green algae
   (d) None of the above

4. Therapeutic activity of garlic is due to the presence of chemical constituent

(a) Lignin (b) Bilobilin

(c) Catechin (d) Allicin

5. Good Manufacturing Practices (GMP) regulations for nutraceuticals primarily aim to:

(a) Minimize production costs

(b) Ensure consistent product quality and safety

(c) Maximize production speed

(d) Promote marketing of products

6. Which of the following is NOT a primary objective of food quality assurance in nutraceuticals?

(a) Ensuring product safety and efficacy

(b) Preventing contamination and adulteration

(c) Maximizing product shelf life

(d) Increasing profit margins

7. Probiotics are

(a) Synthetic nutraceuticals

(b) Vitamin supplements

(c) Helpful bacteria

(d) Digestive enzymes

8. Which of the following is an example of a prebiotic?

(a) Lactobacillus acidophilus

(b) Inulin

(c) Bifidobacterium bifidum

(d) Streptococcus thermophilus

9. What is the main reason for the growing demand for nutraceuticals in India?
   (a) Decreasing health awareness
   (b) Reduced urbanization
   (c) Increased focus on preventive healthcare
   (d) Limited access to healthcare facilities

10. Which regulatory body oversees nutraceutical products in India?
   (a) FSSAI
   (b) CDSCO
   (c) Ministry of Health and Family Welfare
   (d) WHO

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe about non nutritional substance.

Or

(b) Explain about free radicals.

12. (a) Write about functional foods.

Or

(b) Explain the origin of active ingredients.

13. (a) What are the different methods used for testing the purity and potency of nutraceutical ingredients?

Or

(b) What are the laws for nutraceuticals?

14. (a) Mention the factors to be considered before taking nutraceuticals?

Or

(b) Describe the term "probiotics".

15. (a) List the nutraceutical products in the Indian market.

Or

(b) Write a short note on natural health product.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Elaborate about functional foods.

Or

(b) Summarize the antioxidant biomarkers of cancer.

17. (a) Explain the extraction and processing of active ingredients.

Or

(b) Summarizes the role of nutraceuticals in disease control.

18. (a) Explain the key components of a robust quality assurance system for nutraceuticals.

Or

(b) Which regulation prescribes the standard of food products? Explain in detail.

19. (a) Explain the role of symbiotic in nutraceuticals.

Or

(b) Discuss about prebiotics.

20. (a) Discuss the Specific Opportunities in the Indian Nutraceutical Market.

Or

(b) Explain about Entrepreneurial Development in the Nutraceutical Industry.

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C–7957

Sub. Code
96364B

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Nutrition and Dietetics

GENDER STUDIES

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Intersectionality is a term that was coined by _____ in 1989.

   (a) Crenshaw (b) Shulamith firestone

   (c) Talcott Parsons (d) Antony Giddens

2. _____refers to a person's biological and physiological characteristics.

   (a) Sex (b) Gender

   (c) Personality (d) Behavior

3. In 1950, Sigmund Freud presented his theory of _____

   (a) Social development

   (b) Intellectual development

   (c) Psycho Sexual Development

   (d) Cognitive development

4. Three essay's on the theory of sexuality is written by _____

(a) Simon de Bouvier (b) Sigmund Freud
(c) Rachel Carson (d) Judith Butler

5. _____ proposed the Electra complex as an analogous phenomenon in girls

(a) Freud (b) Carl Jung
(c) Julia Kristeiva (d) Ann Oakley

6. Gender identity Research project was established for the study of _____

(a) Male and female
(b) Intersexual and Transsexual
(c) Lesbian and Gay
(d) None

7. Strong, persistent feelings of identification with the opposite gender and discomfort with one's own assigned sex is _____

(a) Gender Identity Disorder
(b) Personality disorder
(c) Identity crisis
(d) Role Distance

8. _____ is a measure for women development.

(a) Gender justice
(b) Gender Empowerment Measure
(c) Gender equality measure
(d) None of the above

9. Feminist movements' are aimed at _____

(a) Liberty
(b) Equality
(c) Participation
(d) Power

10. Women in India are discriminated in _____

(a) Political life (b) Social life

(c) Economic life (d) All the above

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write a short note on theories of gender development.

Or

(b) Highlight the importance of Psychoanalytic theory.

12. (a) What can we do to promote gender equality in detail?

Or

(b) Explain in steps taken by the Government to reduce gender inequality.

13. (a) Write a note on the strengths of gender equality.

Or

(b) Highlight the importance of women's political empowerment.

14. (a) Explain the current women's issues in detail.

Or

(b) Explain in benefits of gender roles.

15. (a) Write an account on women's movement history.

Or

(b) Write an account of feminism in India.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Discuss in detail on areas of gender discrimination.

Or

(b) Describe about female development.

17. (a) Criticize in detail gender issues in development.

Or

(b) Describe in detail on women's empowerment programs.

18. (a) What are the six approaches of gender and development in detail?

Or

(b) Explain in detail about sexual harassment of women at work place.

19. (a) Write a brief account on rights in marriage and divorce.

Or

(b) Describe in detail about gender issues in society.

20. (a) Mention the laws protecting women's rights in India and explain its detail.

Or

(b) Build the general concepts of Nirbhaya movement.

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