C–6617

Sub. Code
96313

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

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 food group is primarily considered energy-yielding?

   (a) Fruits and vegetables

   (b) Dairy products

   (c) Grains and cereals

   (d) Meats and legumes

2. Hidden hunger means _____

   (a) A lack of access to food

   (b) A feeling of fullness despite inadequate nutrient intake

   (c) A desire for food that is not satisfied

   (d) An overwhelming appetite

3. What is the primary nutritive component of rice and wheat?

(a) Vitamins (b) Carbohydrates

(c) Proteins (d) Fats

4. What is one advantage of germinating pulses?

(a) Decreases cooking time

(b) Increases nutrient bioavailability

(c) Reduces flavor

(d) Increases fat content

5. _____ pigment's fat-soluble and commonly found in carrots.

(a) Chlorophyll (b) Carotenoids

(c) Anthocyanins (d) Flavonoids

6. What is a common result of cooking vegetables?

(a) Increase in fiber content

(b) Nutrient loss due to heat and water solubility

(c) Enhanced flavor without any change

(d) Preservation of all nutrients

7. _____ is the purpose of pasteurization of milk?

(a) To enhance flavor

(b) To kill harmful bacteria and extend shelf life

(c) To increase fat content

(d) To change its color

8. Which component is primarily responsible for the emulsifying properties of eggs in cooking?

(a) Yolk (b) Egg white

(c) Shell (d) Membrane

9. _____ is the process converts liquid oils into solid fats by adding hydrogen.

(a) Winterization (b) Refining

(c) Hydrogenation (d) Emulsification

10. _____ factor can lower the smoking point of oils.

(a) High temperatures

(b) Presence of impurities

(c) Low acidity

(d) High fat content

Part B (5 × 5 = 25)

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

11. (a) Give an account on Food nutrients.

Or

(b) Highlight the importance of Protective foods.

12. (a) Describe parboiling rice

Or

(b) Mention the efforts does the government promote millets.

13. (a) Elucidate the challenges of nutrient loss.

Or

(b) Highlight the importance of fruit based beverages.

14. (a) Draw a neat diagram with parts of egg structure.

Or

(b) Write a short note on nutritive value of fish.

15. (a) Explain the factors that lower smoking point.

Or

(b) Write an account of spices types and uses in Indian cookery.

Part C ($5 \times 8 = 40$)

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

16. (a) Explain in detail about food groups.

Or

(b) Describe in detail about cooking methods.

17. (a) Criticize in detail about nutritional importance of millets.

Or

(b) Write in detail on factors affecting cooking quality of pulses.

18. (a) Explain in detail on importance and types of pigments in vegetables.

Or

(b) What are the methods of preparing tea and coffee. Explain its detail.

19. (a) Discuss in detail about pasteurization of milk.

Or

(b) Write in detail about post mortem changes in meat.

20. (a) Fats and oils are important for preparation of Food-Justify.

Or

(b) Explain in detail about stages of sugar cookery.

C–6618

Sub. Code
96314

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025.

First Semester

Nutrition and Dietetics

FOOD CHEMISTRY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Statement related to the process of evaporation that is incorrect is?

   (a) Evaporation occurs at any temperature

   (b) Evaporation takes place within liquid

   (c) Temperature may change during evaporation

   (d) No bubbles are formed in liquid during evaporation

2. In cytochrome P450, P stands for

   (a) Structural proteins

   (b) Substrate protein

   (c) Pigment

   (d) Polymer

3. Which of the following is not a homopolysaccharides?

   (a) Starch (b) Heparin

   (c) Glycogen (d) Cellulose

4. A person who is suffering from goitre should eat more

(a) carrots (b) oranges

(c) cereals (d) seaweeds

5. Which of the following is a healthy eating habit?

(a) Eating breakfast before 6.00 am

(b) Skipping breakfast

(c) Eating nutritious food for breakfast

(d) Eating food high in fibre and fats for breakfast

6. Fats and oils are ester of

(a) Acetic acid and alcohols

(b) Fatty acid and alcohols

(c) Carboxylic acid and alcohols

(d) None of above

7. Saponification is done

(a) By alkali hydrolysis

(b) By acids

(c) By salts

(d) All of above

8. Which of the following is not a suitable solvent for oils and fats?

(a) Benzene (b) CCl4

(c) CHCl3 (d) Water

9. Which of the following is the residual product in the formation of soap?

(a) Glyceraldehyde (b) Glycerol

(c) Glycerine (d) Acrylonitrile

10. Which pigments acts directly to convert light energy to chemical energy?

(a) Chlorophyll a (b) Chlorophyll b

(c) Xanthophyll (d) Carotenoid

Part B (5 × 5 = 25)

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

11. (a) Explain the types and significance of hydration process.

Or

(b) Differentiate between bound water and free water in foods with examples.

12. (a) Describe the swelling of starch granules and its role in food processing.

Or

(b) Explain the effect of sugar, acid, and alkali on starch properties.

13. (a) Discuss the structure and properties of wheat proteins in food chemistry.

Or

(b) Explain the role of egg proteins in food processing and cooking.

14. (a) Describe the process of rancidity in fats and oils and methods to prevent it.

Or

(b) Explain hydrogenation and its impact on the properties of fats.

15. (a) Define pectin's and discuss their role in food products.

Or

(b) Explain enzymatic browning in fruits and vegetables and how it can be controlled?

Part C (5 × 8 = 40)

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

16. (a) Explain the methods used to determine the moisture content in foods and their importance in food quality analysis.

Or

(b) Discuss the role of hydrogen bonding in moisture retention and its impact on food texture.

17. (a) Describe the process of retrogradation and syneresis in starch, along with their effects on food products.

Or

(b) Explain the different stages of sugar cookery and the factors affecting crystal formation in candies.

18. (a) Discuss the effect of heat, acid, and alkali on milk, egg, and meat proteins during food processing.

Or

(b) Explain the role of fermentation and germination in improving the nutritional value of pulse proteins.

19. (a) Describe the decomposition of triglycerides and its impact on fat quality and food safety.

Or

(b) Explain the factors affecting fat absorption in foods and their influence on digestion and metabolism.

20. (a) Discuss the role of plant pigments food, their classification and their effect on food colour.

Or

(b) Explain the properties and active principles of spices and significance in food preservation and flavour.

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C–6619

Sub. Code
96315

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025.

First Semester

Nutrition and Dietetics

FOOD MICROBIOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Who is known as 'The Father of Microbiology'?
   (a) Antonie Philips van Leeuwenhoek
   (b) Robert Koch
   (c) Alexander Fleming
   (d) Robert Hooke
2. Which of the following bacteria does not cause food poisoning?
   (a) *Staphylococcus aureus*
   (b) *Acetobacter aceti*
   (c) *Bacillus cereus*
   (d) *Campylobacter jejuni*
3. What is the optimum temperature range for thermophiles?
   (a) 40-45°C (b) 20-30°C
   (c) 60-90°C (d) 55-75°C

4. Minimum water activity required for some yeast and molds to grow is

(a) 1.00 (b) 0.65

(c) 1.50 (d) 2.00

5. Which one of the following matches is not a correct way of food preservation?

(a) Raw Mango-pickle

(b) Potato-Chips

(c) Milk-Paneer

(d) Apple-Jam

6. Mark on the canned jam or jelly is

(a) AGMARK (b) ISIC

(c) FPOD (d) None of the these

7. Many substances enter foodstuffs accidentally during production, processing, storage and handling often referred to as food _____

(a) Food contaminants

(b) Food adulterants

(c) Food additives

(d) All above

8. Molds causing spoilage of eggs include species of

(a) *Cladosporium* (b) *Mucor*

(c) *Thamnidium* (d) All of these

9. _____ is the example of antiripening agent.

(a) 2, 4, 5 trichloro phenoxy acetic acid

(b) Maleic hydrazide

(c) Sulphur dioxide

(d) Sodium benzoate

10. The examples of thickening agents are _____

(a) Agarose (b) Amylose

(c) Guar gum (d) All above

Part B (5 × 5 = 25)

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

11. (a) Explain the contribution of Louis Pasteur and Robert Koch to microbiology.

Or

(b) Describe the structure the of algae and viruses.

12. (a) Describe the relative humidity on food spoilage.

Or

(b) What is redox potential? How does it affect microbial growth in food?

13. (a) Write the common causes food spoilage occur on meat and meat products.

Or

(b) Discuss the factors responsible for the spoilage of meat, eggs, and poultry.

14. (a) Write short notes on preservation and contamination of honey sucrose.

Or

(b) List the defects of microbial spoilage observed on bread.

15. (a) Explain the role of microorganisms in the fermentation of curd and sauerkraut.

Or

(b) How are microorganisms used in the production of different type of alcoholic beverages?

Part C (5 × 8 = 40)

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

16. (a) Elaborate notes on general morphology of fungi and yeast.

Or

(b) Write the main difference between bacteria and viruses.

17. (a) How do intrinsic factors like pH, water activity, and redox potential influence microbial growth in food?

Or

(b) Explain the role of extrinsic factors such as temperature, relative humidity, and gaseous atmosphere in microbial growth and food spoilage.

18. (a) Discuss about the methods food preservation. How do bacteria fungi and yeasts contribute to spoilage?

Or

(b) Explain how microbial contamination is controlled in milk and milk products.

19. (a) Discuss the factors influencing the microbial spoilage and preservation of cereal and sugar.

Or

(b) Explain the role of moisture content and packaging in the preservation of nonperishable foods.

20. (a) Describe the causes, symptoms, and prevention of foodborne diseases such as cholera, typhoid, and diarrhea.

Or

(b) Explain the microbial causes of food poisoning and botulism and shigellosis their impact on human health.

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C–6620

Sub. Code
96317

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

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 makes water a liquid at room temperature?

   (a) Non covalent interactions

   (b) Hydrogen bonds between water molecules

   (c) Van der Waals forces of attraction

   (d) Covalent bonding

2. The heat of vaporization of water is _____.

   (a) 540 Kj/g (b) 580 kJ/g

   (c) 1060 J/g (d) 600 kJ/g

3. The degree of ionization does not depend on which of the following parameter?

(a) Nature of solvent

(b) Temperature

(c) Concentration

(d) Current

4. Which of the following mixture in aqueous solution of equimolar concentration acts as a buffer solution?

(a) NH4 OH(excess) + HCl

(b) HNO3 + NaOH

(c) CH3 COOH + NaOH(excess)

(d) H2 S04 + KOH

5. Based on which of the following enzymes Hydrolysis reactions are catalyzed?

(a) Hydrolase (b) Oxidoreductase

(c) Isomerase (d) Ligase

6. Which of the following is an imino acid?

(a) Serine (b) Alanine

(c) Glycine (d) Proline

7. The stability of an α-helix is not affected by which of the following?

(a) Bulkiness

(b) Occurrence of alanine and glycine residues

(c) Electrostatic repulsion

(d) Interaction between R groups spaced three residues apart

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

(a) Trypsin (b) Enolase

(c) Chymotrypsin (d) Hexokinase

9. Which of the following is true about phosphodiester linkage?

(a) 3'-phosphate group of one nucleotide unit is joined to the 5'-hydroxyl group of the next nucleotide

(b) 3'-phosphate group of one nucleotide unit is joined to the 3'-hydroxyl group of the next nucleotide

(c) 5'-phosphate group of one nucleotide unit is joined to the 3'-hydroxyl group of the next nucleotide

(d) 5'-phosphate group of one nucleotide unit is joined to the 5'-hydroxyl group of the next nucleotide

10. Which of the following enzymes remove supercoiling in replicating DNA ahead of the replication fork?

(a) Topoisomerases (b) Primases

(c) Helicases (d) DNA polymerases

Part B (5 × 5 = 25)

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

11. (a) Write the classifications of Carbohydrates with suitable examples.

Or

(b) Describe the structure and functions of Mucopolysaccharides.

12. (a) Define lipids and classify them with suitable examples.

Or

(b) What are ketone bodies, and how are they related to fatty acid metabolism?

13. (a) How do fibrous and globular proteins differ in function and solubility?

Or

(b) Explain the alpha-helical structure of protein with examples.

14. (a) What is the salvage pathway of nucleotide metabolism?

Or

(b) Write the structure and functions of cholesterol.

15. (a) What is the significance of allosteric regulation in cellular homeostasis?

Or

(b) Discuss the Clover leaf structure of t-RNA.

Part C

(5 × 8 = 40)

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

16. (a) How are carbohydrates digested and absorbed in the body?

Or

(b) What happens when sucrose is hydrolyzed? How does sucrose differ from artificial sweeteners?

17. (a) Explain in detail the structural organization of proteins.

Or

(b) What is transamination and deamination of amino acids? How are amino acids used for energy production?

18. (a) How does the beta-pleated sheet differ from the alpha helix? What kind of secondary structure is the beta-pleated sheet?

Or

(b) What are enzymes, and what is their role in biochemical reactions? What is the induced fit model of enzyme action?

19. (a) Explain the different theories proposed for mechanism of enzyme substratecomplex formation.

Or

(b) Define isoenzymes and explain their structure, organ distribution and diagnostic importance.

20. (a) Explain the structure and functions of different type of RNAs.

Or

(b) Explain the Watson and Crick model of DNA. Add a note on different forms of DNA (DNA polymorphism).

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C–6621	Sub. Code 96323

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

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. Basal Metabolic Rate (BMR) is

   (a) Metabolic rate of person who is at complete rest

   (b) Metabolic rate of a new born baby

   (c) Metabolic rate of person who is physically active

   (d) Metabolic rate of a pregnant lady

2. Which of the following is the most abundant biomolecule on the earth?

   (a) Lipids (b) Proteins

   (c) Carbohydrates (d) Nucleic acids

3. A patient of type two diabetes mellitus is given nutrition rich in_____ ?

   (a) Proteins (b) Carbohydrates

   (c) Fat (d) Fibre rich diet

4. _____ helps in the regulation of blood volume and blood pressure.

(a) Iron (b) Iodine

(c) Sodium (d) Phosphorous

5. Onions, broccoli, fresh fruits, milk, eggs, and iodized salt are good sources of _____.

(a) Phosphorus (b) Sodium

(c) Iodine (d) Both (b) and (c)

6. Passion fruit and pomegranate are rich in which mineral

(a) Phosphorous (b) Calcium

(c) Manganese (d) None of the above

7. Which of the following vitamin helps in blood clotting?

(a) Vitamin A (b) Vitamin C

(c) Vitamin D (d) Vitamin K

8. Which of the following are examples of macro minerals

(a) Sodium (b) Calcium

(c) Chloride (d) All of the above

9. Passion fruit and pomegranate are rich in which mineral

(a) Phosphorous (b) Calcium

(c) Manganese (d) None of the above

10. According to the Indian Minerales year book 2020, which state has the highest production of manganese in India

(a) Karnataka (b) Madhya Pradesh

(c) Odisha (d) Maharashtra

Part B (5 × 5 = 25)

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

11. (a) Definition energy How to measures energy units included?

Or

(b) Write down the factors affecting BMR, measurements and clinical significance

12. (a) Detail notes on Nutritional classification carbohydrates, sources, functions.

Or

(b) Benefits dietary fibre preventing disease and sources on human health.

13. (a) Give account an sources and function of essential fatty acids.

Or

(b) Short notes on composition, metabolisms, function Lipids

14. (a) Writes down each one five function of macro minerals with example of disorder.

Or

(b) Short notes on RDA.

15. (a) Give account on Fat soluble vitamins.

Or

(b) Short notes on folic acids and riboflavin requirements and function.

Part C

(5 × 8 = 40)

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

16. (a) Explain the energy value determination of direct and indirect calorimetric methods.

Or

(b) Explain how to estimate the energy requirements in physical activity BMR.

17. (a) Describe the notes on PER and NPU with chemical score.

Or

(b) Write the classification and functions protein

18. (a) Short notes on water electrolytes and water balance.

Or

(b) Describe the nutritional classification and composition of lipids.

19. (a) Explain the general function and imbalance deficiency in macro minerals.

Or

(b) Describes the requirements and deficiency in microminerals.

20. (a) Discuss about the Vitamin A,D,E,K and functions.

Or

(b) Brief notes on riboflavin, thiamine and its functions of deficiency disorder in our health.

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C–6623

Sub. Code
96324

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Second Semester

Nutrition and Dietetics

NUTRITION THROUGH LIFE CYCLE

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following statements is false about nutrients in milk?

   (a) Milk is a good source of calcium

   (b) Milk is a good source of protein

   (c) Milk is a good source of vitamin C

   (d) Milk is a good source of vitamin D

2. Guava, Lemon, Orange and Tomato are rich in _____

   (a) vitamin A (b) vitamin B

   (c) vitamin C (d) vitamin D

3. Potatoes cereals, beans, pulses and oats are rich in _____

   (a) Proteins (b) Vitamins

   (c) Minerals (d) Carbohydrates

4. Which of the following is not a component of food?

(a) Fats (b) Fibres

(c) Water (d) None of the above

5. The most significant and essential mineral required for our body is _____

(a) Iron (b) Sodium

(c) Calcium (d) All of the above

6. Which one of the following statements is incorrect?

(a) Fertility is optimum within the BMI range of 18.5 – 24.9 kg/m^2

(b) A waist-to-hip ratio>0.8 is associated with increased fertility

(c) Weight normalisation is frequently all that is needed to help infertile women to conceive

(d) No alcohol should be consumed by women trying to get pregnant or those who may be pregnant

7. The extra energy cost of pregnancy (about 77,000 kcal over the course of pregnancy) is met by:

(a) Increased efficiency of energy utilization

(b) Reduced physical activity

(c) Increased food intake

(d) All of the above

8. DEXA stands for

(a) Dual Energy X-ray Absorptiometry

(b) Dual Energy X-ray Absorption

(c) Dual Energy X-ray Analysis

(d) Dual Energy X-ray Absorption Analysis

9. Adolescents eat about their meals away from home

(a) One-fourth (b) One-third

(c) One (d) None of these

10. Which mineral enhances insulin activity?

(a) Hb B (b) Myoglobin

(c) Heme iron (d) None of these

Part B (5 × 5 = 25)

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

11. (a) What is the nutritional requirement during adulthood?

Or

(b) List the factors affecting the nutrition of the older adult.

12. (a) What are the factors affecting nutrition?

Or

(b) What is the most important nutrient needed during exercise?

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

Or

(b) How do life stages affect nutritional intake?

14. (a) What are the factors that affect the nutritional value of food?

Or

(b) What are the factors contributing to nutritional deficiency?

15. (a) How do biological factors affect nutrition?

Or

(b) What is the role of nutrition in maintaining health?

Part C (5 × 8 = 40)

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

16. (a) Summarize the common factors influence food intake.

Or

(b) Discuss the factors contribute to nutrition related disease.

17. (a) How important is nutrition while breastfeeding?

Or

(b) Discuss about the Common Causes of Lactation Failure.

18. (a) Explain the nutritional needs of a school age child.

Or

(b) Discuss the nutritional deficiency in school age children.

19. (a) What are the most important nutrients for children?

Or

(b) What nutrition is important during the adult stage?

20. (a) What are the nutritional problems in early adulthood?

Or

(b) Discuss the affects nutritional needs of older adults.

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C–6628	Sub. Code 96326

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Second Semester

Nutrition and Dietetics

HUMAN PHYSIOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The process of formation of blood corpuscles is called _____.

   (a) Haemolysis (b) Haemopoiesis

   (c) Haemozoin (d) Haemolytic

2. What is Pernicious anemia?

   (a) Low RBC count

   (b) Destruction of RBC maturation

   (c) Death of WBC

   (d) Low WBC count

3. Graveyard of RBC is _____.

   (a) Spleen (b) Liver

   (c) Stomach (d) Pancreas

4. Which leucocytes release heparin and histamine into the blood?

   (a) Basophils (b) Neutrophils

   (c) Monocytes (d) Lymphocytes

5. Which epithelial cells form the inner lining of the trachea in humans?

(a) Pseudostratified epithelium

(b) Cuboidal epithelium

(c) Squamous epithelium

(d) Columnar epithelium.

6. Which part of the alimentary canal does not generate enzymes?

(a) Mouth (b) Stomach

(c) Duodenum (d) Oesophagus.

7. A patient is typically advised to increase the daily consumption of meat, legumes, milk, and eggs in the diet when he or she suffers from:

(a) Kwashiorkor (b) Rickets

(c) Anaemia (d) Scurvy

8. Largest sized RBC is seen in _____.

(a) Elephant (b) Whale

(c) Man (d) Amphiuma

9. Irregular nuclei are seen in _____.

(a) Basophils (b) Eosinophils

(c) Monocytes (d) Neutrophils

10. Hemoglobin is a _____.

(a) Respiratory pigment

(b Reproductive pigment

(c) Fat

(d) Carbohydrate

Part B (5 × 5 = 25)

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

11. (a) Summarize the major functions of LH and FSH.

Or

(b) Examine the functional and structural mechanism of the neuron.

12. (a) Summarize the functions and importance of the salivary gland.

Or

(b) Illustrate the importance of the dialysis process.

13. (a) Explain the major process of the female reproductive organ.

Or

(b) Write shortly about the gaseous exchange in the lungs.

14. (a) Determine the mechanism involved in fertilization with a neat diagram.

Or

(b) Examine the functions of the thyroid gland and their clinical tests.

15. (a) List out the menstrual regulating hormones that are secreted by the pituitary gland.

Or

(b) Determine the mechanism of the excretory system for urine formations.

Part C (5 × 8 = 40)

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

16. (a) Extend the respiratory process to various steps taken in the lungs.

Or

(b) Detail about the major functions and structure of auditory and visual pathways.

17. (a) Outline the ultrastructure of the lungs with the major functional test.

Or

(b) Overall the structure and functions of the spleen with a neat diagram.

18. (a) Compare the function and structural basis of RBC and WBC.

Or

(b) Details about the structure and functional activities of the large intestine.

19. (a) Explain briefly about the structure and functions of the heart.

Or

(b) Summarize the structure and function of the skin barrier.

20. (a) Explain briefly about the functions and composition of blood.

Or

(b) Outline the structure and functions of the eye with a neat diagram.

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C–6629

Sub. Code
96333

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

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. What is the primary purpose of food preservation?
   (a) To increase food weight
   (b) To extend the shelf life of food
   (c) To enhance food flavor
   (d) To reduce food nutrients

2. Rancidity in fats and oils is an example of which type of spoilage?
   (a) Microbial spoilage (b) Enzymatic spoilage
   (c) Chemical spoilage (d) Physical spoilage

3. Which of the following is a by –product of rice milling?
   (a) Wheat germ (b) Bran
   (c) Semolina (d) Gluten

4. Which method is commonly used for the processing of millets to remove husk?

(a) Wet milling (b) Dry milling

(c) Pounding (d) Sprouting

5. Which microorganism is most commonly targeted in milk pasteurization?

(a) Escherichia coil

(b) Listeria monocytogenes

(c) Mycobacterium tuberculosis

(d) Salmonella

6. The process of breaking down fat globules in milk to prevent cream separation is called:

(a) Pasteurization (b) Homogenization

(c) Fermentation (d) Sterilization

7. Which food preservation method works by lowering the temperature to slow down microbial activity?

(a) Canning (b) Refrigeration

(c) Fermentaion (d) Dehydration

8. Sterilization of canned foods is usually done at what temperature?

(a) 63° C (b) 100° C

(c) 121° C (d) 37°C

9. Which of the following is an example of chemical food preservation?

(a) Refrigeration

(b) Use of salt or sugar

(c) Blanching

(d) High-pressure processing

10. Which type of food preservation method involves using beneficial microorganisms to enhance food safety and flavour?

(a) Freezing (b) Drying

(c) Fermentation (d) Canning

Part B (5 × 5 = 25)

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

11. (a) What is food processing, why it is important?

Or

(b) Write the principles of food preservation.

12. (a) Describe the types of flour.

Or

(b) Discuss the milling process involved in corn and sorghum.

13. (a) Write notes on different types and benefits milk.

Or

(b) Discuss the role of probiotic in yogurt.

14. (a) Describe the differences between refrigeration and freezing.

Or

(b) What is freeze drying? Explain its application in food preservation?

15. (a) How does sugar concentration help in food preservation?

Or

(b) What is the role of lactic acid bacteria in food fermentation?

Part C

(5 × 8 = 40)

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

16. (a) Describe the effect of food processing on nutritional properties of food.

Or

(b) How does food spoilage occur and explain the types of food spoilage?

17. (a) Explain the different methods of cereal processing and their importance in the food industry.

Or

(b) Describe on health risk of processed food like pasta and bakery products.

18. (a) Discuss the step involved in the manufacturing of butter, Explain the role of churing in butter production.

Or

(b) Explain the process of condensed milk and evaporated milk production.

19. (a) Detailed about various freezing methods in food industry.

Or

(b) Difference between sun dry and Spray-Dried Products.

20. (a) Describe the advantages and disadvantages of using chemical preservatives in food.

Or

(b) Explain the steps involved in wine making process.

C–6630

Sub. Code
96334

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

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 are the key factors that affect the quality of foods?
   (a) Texture, taste, and aroma
   (b) Safety, nutritional value, and sensory characteristics
   (c) Packaging, labelling, and storage
   (d) All of the above

2. What is the primary cause of quality deterioration in food?
   (a) Microbial growth
   (b) Enzymatic activity
   (c) Oxidation
   (d) All of the above

3. Colouring agent for butter and cheese
   (a) Annatto (b) Curcumin
   (c) Lycopene (d) Paprika

4. What is the purpose of thickeners in food additives?

(a) To add texture to food

(b) To preserve food and extend its shelf life

(c) To improve the nutritional value of food

(d) To add color to food

5. Which one is not the characteristic of sensory evaluation

(a) Appearance (b) Ingredient

(c) Flavour (d) Taste

6. Which of the following is objective evaluation?

(a) Taste (b) Flavour

(c) Chemical Method (d) Texture

7. The capacity of a substance to produce harm or injury of any kind under any conditions

(a) Toxicity (b) Hazard

(c) Adverse effects (d) Toxin

8. Substances which are used for making the food products unsafe for human consumption.

(a) Contamination (b) Adulteration

(c) Adulterants (d) Hazard

9. Central BIS Laboratory is situated at

(a) Mumbai (b) Delhi

(c) Nagpur (d) Kochi

10. Full form of PFA

(a) Prevention of Food Adulteration

(b) Prevention of Food Adulterants act

(c) Prevention of Food Adulteration Act

(d) Prevention of Food Adulterants

Part B (5 × 5 = 25)

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

11. (a) Write a short note on "food quality" and its importance.

Or

(b) Describe about "quality features of foods".

12. (a) Discuss the food specification for milk.

Or

(b) Elucidate the optimal level recommended usage specification for food additives.

13. (a) Write a short note on sensory characters of food.

Or

(b) State the types of a panel member.

14. (a) State about

(i) Sea food toxins

(ii) Goitrogens.

Or

(b) Write the measures to control food adulteration.

15. (a) Explain about the prevention of food adulteration act.

Or

(b) Discuss about the principles of HACCP with flow chart.

Part C

(5 × 8 = 40)

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

16. (a) Write about the quality checking of raw materials?

Or

(b) Give an account on the simple techniques used to quality checking of non-vegetarian foods.

17. (a) Explain about food specifications.

Or

(b) Elucidate about the food additives and their specifications.

18. (a) Elaborate the physiological process of subjective evaluation.

Or

(b) Enumerate the instruments used for objective evaluation in detail.

19. (a) Explain about Mycotoxins in detail.

Or

(b) Discuss the test for detecting food adulteration and contamination.

20. (a) Describe the process of international food standards and codex Alimentarious.

Or

(b) Discuss about FSSAI.

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C–6631

Sub. Code
96336

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

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. Which component of health-related fitness is measured by a sit-and-reach test?

   (a) Muscular endurance

   (b) Flexibility

   (c) Body composition

   (d) Speed

2. Which of these is a skill- related component of physical fitness?

   (a) Body composition (b) Muscular endurance

   (c) Speed (d) Flexibility

3. Which nutrient helps with muscle recovery and growth?

   (a) Carbohydrates (b) Fats

   (c) Protein (d) Water

4. Which mineral is crucial for oxygen transport in the blood?

(a) Calcium (b) Iron

(c) Sodium (d) Potassium

5. Which of the following treadmill features helps simulate uphill running?

(a) Speed control

(b) Decline adjustment

(c) Incline adjustment

(d) Heart rate monitor

6. What is the main byproduct of anaerobic glycolysis?

(a) Carbon dioxide (b) Oxygen

(c) Water (d) Lactic acid

7. Which of the following lifestyle changes can help prevent diet-related diseases?

(a) Regular exercise

(b) Eating a balanced diet

(c) Avoiding excessive sugar and processed foods

(d) All of the above

8. Which type of anemia is caused by a deficiency of Vitamin B12

(a) Iron-deficiency anemia

(b) Aplastic anemia

(c) Pernicious anemia

(d) Hemolytic anemia

9. Which of the following factors contributes to oxidative stress in athletes?

(a) Excessive physical exertion

(b) Poor hydration

(c) Lack of protein intake

(d) Low carbohydrate consumption

10. Which fluid is most recommended for hydration at high altitudes?

(a) Coffee

(b) Alcohol

(c) Water and electrolyte rich drinks

(d) Sugary soft drinks

Part B

$(5 \times 5 = 25)$

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

11. (a) Write the principles of physical fitness.

Or

(b) Describe the guidelines for healthy eating.

12. (a) Explain the Food groups.

Or

(b) Write down the importance of calcium during exercise.

13. (a) Describe the benefits of fitness training.

Or

(b) Write the importance of Motorized Treadmill.

14. (a) Describe the causes and clinical features of Obesity.

Or

(b) Discuss the role of unhealthy eating and lack of exercise in the development of hypertension.

15. (a) Explain the Relaxation techniques.

Or

(b) Why is hydration important at high altitudes?

Part C (5 × 8 = 40)

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

16. (a) Explain the types of physical fitness.

Or

(b) Write down the role of exercise in health promotion.

17. (a) Elaborate the Nutritional importance of carbohydrates during exercise

Or

(b) Illustrate the optimum nutrition and hydration for health.

18. (a) Explain about the physical activity training equipment.

Or

(b) Write the importance of Elliptical bicycle and bicycle ergometer.

19. (a) Describe the relationship between poor diet, lack of physical activity and type two diabetes.

Or

(b) Discuss the role of diet and physical activity and preventing conditions like Cancer.

20. (a) Explain the role of antioxidants in combating oxidative stress in athletes.

Or

(b) Discuss the key nutritional challenges faced at high altitudes.

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C–6633	Sub. Code 96344

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025.

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. Food is purchased then stored either chilled or frozen for later use

   (a) ready-preapared (b) conventional

   (c) centralized (d) assembly-service

2. Person responsible for service throughout the dining room or a section of it.

   (a) backwaiter (b) headwaiter

   (c) lead waiter (d) front waiter

3. What kind of source should you buy ingredients from?

   (a) A trusted source

   (b) An approved source

   (c) A source that meets all applicable local, stat, and federal laws

   (d) All of the above

4. Which of the following would be considered a food service equipment accessory?

(a) An electrical plug

(b) A pasta roller attachment for a mixer

(c) A chrome finish on a toaster oven

(d) A safety lock on an oven

5. Which on the following is not included in leadership styles?

(a) Autocratic (b) Laissez Faire

(c) Institutional (d) All of the above

6. Which of the followings are included in duties of food service manager?

(a) Managing the Restaurant Staff

(b) Checking Equipment Regularly

(c) both (a) and (b)

(d) none of the above

7. The techniques for appraising performance include:

(a) Graphic Rating scale method

(b) potential rating

(c) Diversity counts

(d) none of the above

8. _____is the first phase of the accounting cycle.

(a) Making a decision about the business

(b) Posting entries to ledger accounts

(c) Preparing journal

(d) Identifying an economic event or transaction

9. Which of the following is not related to the food safety management system?

(a) GHP (b) GMP

(c) HACCP (d) risk of injury

10. Cleanliness, physical exercise, rest and sleep are a part of _____

(a) Hygiene (b) Social hygiene

(c) Personal hygiene (d) None of the above

Part B (5 × 5 = 25)

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

11. (a) Write about the ready prepared system and assembly service system.

Or

(b) Write about the types of menu

12. (a) Write the procedure for purchasing.

Or

(b) Elucidate the types of food service equipment

13. (a) Write a brief note on qualities of a good leader.

Or

(b) Explain the styles of leadership

14. (a) State about the performance appraisal of employees.

Or

(b) Give an account on cost concept.

15. (a) State the importance of waste disposal

Or

(b) Discuss on personal hygiene.

Part C (5 × 8 = 40)

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

16. (a) Explain about the types of food service system.

Or

(b) Discuss the techniques in writing menu card with example.

17. (a) Give an account on receiving in detail.

Or

(b) Elucidate about the quantity food production and service.

18. (a) Elaborate the functions and tools of management.

Or

(b) Enumerate about types and theories of organization.

19. (a) Explain about the labour law governing food service establishment.

Or

(b) Discuss about the financial management.

20. (a) Expand GMP and explain GMP in food industry.

Or

(b) Discuss the health and safety at work.

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C–6637	Sub. Code
	96345

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025.

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. The process of reducing the milk fat globules size of allow them to stay evenly distributed in milk is called _____.

   (a) Standardization (b) Pasteurization

   (c) Homogenization (d) Fortification

2. Process of adding vitamins to milk is known as:

   (a) Flavoring (b) Fortification

   (c) Fermentation (d) Sterilization

3. _____ is used as a stabilizer in ice cream.

   (a) Gelatin (b) Sugar

   (c) Milk (d) Fruits

4. Marketing strategy is a _____ type of strategy.

   (a) Business level (b) Growth strategy

   (c) Corporate strategy (d) Functional strategy

5. Product specification does not require

(a) HACCP
(b) Shelf life
(c) Marketing strategy
(d) Ingrediants

6. Which of the following mineral functions by building strong bones and teeth?

(a) Iodine (b) Calcium
(c) Iron (d) Sodium

7. Which among these is a factor for processed food in India?

(a) Changing lifestyles
(b) Food habits
(c) Organized food retail
(d) All of the mentioned

8. Which of the following is used to pack carbonated soft drinks?

(a) HDPE (b) PET
(c) PS (d) PVC

9. Which of the following could be a strength?

(a) Weather
(b) A new international market
(c) A price that is too high
(d) The location of a business

10. Omega-3 fatty acids are naturally high in salmon. Therefore, salmon can be classified as this type of food?

(a) Fortified food
(b) Functional Food
(c) Dietary supplement
(d) Nutraceutical

Part B (5 × 5 = 25)

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

11. (a) Write in detailed account on psychological dimensions of food consumption.

Or

(b) What preparation is necessary for the consumer for screening food products?

12. (a) Briefly explain about the status of food processing industry.

Or

(b) What preparation is necessary for the consumer for screening food products?

13. (a) Describe about weaning foods.

Or

(b) Criticize health foods and sports foods.

14. (a) Briefly explain about standardization for testing and evaluation of food sample.

Or

(b) Write the general principles and important of SWOT analysis.

15. (a) Write the marketing strategies of food products.

Or

(b) Elucidate the financial accounting procedures of food products.

Part C (5 × 8 = 40)

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

16. (a) Elaborate in detail about method of food intake.

Or

(b) Write about the general principles underlying for new product development.

17. (a) Summaries the food product design and specifications.

Or

(b) Write a detailed account of food processing and product development.

18. (a) Discuss in detail about foods for defence services.

Or

(b) Write a detailed account of development of recipe.

19. (a) Identify the importance of sensory and microbial testing of processed foods.

Or

(b) Summaries the packaging laws and regulation of food safety.

20. (a) Give an elaborate account of market research, cost calculation and advertising methods.

Or

(b) Discuss in detail about financial management and marketing of food products.

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C–6643	Sub. Code 96351

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025.

Fifth Semester

Nutrition and Dietetics

DIETETICS – II

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following confirmed values meet the diagnostic threshold for diabetes?

   (a) fasting blood glucose? 140 mg/dl

   (b) random glucose > 160 mg/dl

   (c) 2 hour post prandial glucose ≥ to 126 mg/dl

   (d) fasting blood glucose ≥ 126 mg/dl

2. Which of the following would not be an expected sign of right-sided congestive heart failure?

   (a) Prominent jugular vein

   (b) Hepatomegaly

   (c) Pulmonary edema

   (d) Pleural effusion

3. What is the main component of urinary calculi?

   (a) Calcium (b) Potassium

   (c) Iron (d) None of the above

4. IgA nephropathy is associated with a vasculitis disease, which is:

(a) Churg-Strauss syndrome

(b) Buerger disease

(c) Henoch-Schönlein purpura

(d) Polyarteritis

5. People with gout should avoid consumption of which of the following

(a) Dairy products (b) Alcohol

(c) Both (a) and (b) (d) None of these

6. What are common symptoms of food allergies?

(a) Swelling or itching of the face, lips and tongue

(b) Hives

(c) Wheezing

(d) All of the above

7. ART means

(a) Antiretroviral therapy

(b) Assisted Reproductive technology

(c) Aided reproductive technology

(d) None of the above

8. Which type of cancers form in bone and soft tissues, including fibrous tissue?

(a) Leukemia (b) Sarcoma

(c) Lymphoma (d) Carcinoma

9. Neutraceutical is a food or food component that has been shown to

(a) Curative effect on disease

(b) Beneficial effect on health beyond basic nutrition

(c) Preventive effect on diseases

(d) Antiaging Effect

10. What is the primary focus of diet counselling?

(a) Medication prescription
(b) Menu Planning
(c) Behavioral changes
(d) Physical therapy

Part B (5 × 5 = 25)

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

11. (a) Write down the Pathogenesis for the disease of endocrine pancreas.

Or

(b) Describe about pathogenesis and causes of atherosclerosis.

12. (a) Is nephritis life threatening? Explain.

Or

(b) Explain the causes, symptoms and nutritional modification of urinary calculi.

13. (a) Brief note on Arthritis.

Or

(b) Give an account on Gout.

14. (a) Distinguish the grades of cancer cells.

Or

(b) What are the stages of HIV infection?

15. (a) Write the prevalence of obesity and its dietary management.

Or

(b) Discuss about the counselling guidelines.

Part C (5 × 8 = 40)

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

16. (a) Enumerate the prevalence, aetiology and dietary management for diabetes mellitus.

Or

(b) Discuss about acute and chronic cardiac diseases.

17. (a) Write about the incidence of renal failure. Give the diet plan for the same.

Or

(b) Explain the condition of dialysis.

18. (a) Give an account on causes, symptoms and dietary management for various food allergy.

Or

(b) Discuss nutritional care in disease of the musculoskeletal system in osteoporosis.

19. (a) Explain in detail about Cancer therapy.

Or

(b) Mention about the pathophysiology and the Nutritional care of HIV infection.

20. (a) Describe the role of nutraceuticals in the prevention of diabetes mellitus and obesity.

Or

(b) Write down the dietary counselling process and counselling guidelines steps.

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C–6648	Sub. Code 96352

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025.

Fifth Semester

Nutrition and Dietetics

COMMUNITY NUTRITION

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Deficiency of which vitamin is associated with Neural Tube Defects?

   (a) Vitamin B3 (b) Vitamin B6

   (c) Vitamin B9 (d) Vitamin B12

2. What percentage of milk fat is present in standardized milk?

   (a) 3.50% (b) 3.75%

   (c) 4.25% (d) 4.50%o

3. A deficiency of iodine may lead to which of these?

   (a) Endemic goitre

   (b) Hypothyroidism

   (c) Cretinism

   (d) All of the above

4. What is the major protein of muscle fiber of meat?

(a) Myosin (b) Leucine

(c) Albumin (d) Globulin

5. Pernicious anemia is caused by deficiency of?

(a) Iron (b) Folic acid

(c) Vitamin B12 (d) Vitamin A

6. What is the full form of PUFA?

(a) Polyunsaturated fatty acids

(b) Poly Unhealthy Fatty Acids

(c) Poly unused fats and acids

(d) None of the above

7. Kwashiorkor is caused by a deficiency of?

(a) Vitamin K

(b) Proteins

(c) Calcium

(d) Fats

8. Salt is iodized to prevent?

(a) Marasmus (b) Goitre

(c) Pellagra (d) Anaemia

9. The structure of bones and teeth is laid by protein

(a) Albumin (b) Collagen

(c) Hemoglobin (d) Fibrin

10. Increased thirst termed as _____ is a common symptom of Diabetes Mellitus

(a) Polyphagia (b) Polydipsia

(c) Polyuria (b) All of above

Part B (5 × 5 = 25)

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

11. (a) Describe the cost of wastage due to malnutrition in pregnancy.

Or

(b) How to measure and overcome malnutrition?

12. (a) Write about the direct and indirect methods of nutrition status of the community.

Or

(b) Give the synergism between malnutrition and infection.

13. (a) List of ecological factors leading to malnutrition.

Or

(b) Write the importance of food technology and food fortification.

14. (a) What is the important role of national nutrition policy?

Or

(b) Mention the objectives and role of goitre control programme.

15. (a) Describe the importance of nutrition education.

Or

(b) Explain about the function and role of FAO & NIN.

Part C

(5 × 8 = 40)

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

16. (a) Briefly explain the vitamin A deficiency diseases.

Or

(b) Discuss the consequences of malnutrition.

17. (a) Explain the national nutritional problems and their implications.

Or

(b) How to overcome malnutrition? What are the measures of malnutrition?

18. (a) Discuss about empowering women to improve their nutritional status.

Or

(b) Explain the CMNMP, ICDS & TINP organized by the government.

19. (a) How to assess of nutritional status of the community?

Or

(b) Write about the aim and objectives of ICMR, NIN, and NIPCCD.

20. (a) Discuss the various learning methods in nutrition education.

Or

(b) List the nutrition deficiency-related diseases in the community.

C–6649	Sub. Code 96354A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025.

Fifth Semester

Nutrition and Dietetics

RESEARCH METHODOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following statement is correct?

   (a) Reliability ensures the validity

   (b) Validity ensures reliability

   (c) Reliability and validity are independent of each other

   (d) Reliability does not depend on objectivity

2. Which of the following statements is correct?

   (a) Objectives of research are stated in first chapter of the thesis

   (b) Researcher must possess analytical ability

   (c) Variability is the source of problem

   (d) All the above

3. Bibliography given in a research report:

(a) shows vast knowledge of the researcher

(b) helps those interested in further research

(c) has no relevance to research

(d) all the above

4. A research problem is feasible only when:

(a) it has utility and relevance

(b) it is researchable

(c) it is new and adds something to knowledge

(d) all the above

5. The study in which the investigators attempt to trace an effect is known as:

(a) Survey Research

(b) Summative Research

(c) Historical Research

(d) 'Ex-post Facto' Research

6. Generalized conclusion on the basis of a sample is technically known as:

(a) Data analysis and interpretation

(b) Parameter inference

(c) Statistical inference

(d) All of the above

7. Research problem is selected from the stand point of:

(a) Researcher's interest

(b) Financial support

(c) Social relevance

(d) Availability of relevant literature

8. The research is always _____.

(a) verifying the old knowledge

(b) exploring new knowledge

(c) filling the gap between knowledge

(d) all of these

9. Research is

(a) Searching again and again

(b) Finding a solution to any problem

(c) Working in a scientific way to search for the truth of any problem

(d) None of the above

10. A common test in research demands much priority on

(a) Reliability (b) Useability

(c) Objectivity (d) All of the above

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

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

11. (a) Explain in brief about experimental research and descriptive research.

Or

(b) Write the process and types of research design.

12. (a) What is sampling? Explain the selection, process, types and errors in sampling.

Or

(b) List out the difference between probability and non-probability sampling.

13. (a) Mention the major difference between qualitative and quantitative data.

Or

(b) Elaborate about the types of qualitative research.

14. (a) Explain in brief about the census and sample survey.

Or

(b) List out the types of data collection in research.

15. (a) Summarize the layout of research report.

Or

(b) Discuss the significance of report writing.

Part C $(5 \times 8 = 40)$

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

16. (a) Write short notes on following:

(i) Ex post facto research

(ii) Motivation in research

(iii) Pilot survey

Or

(b) Briefly describe the different steps involved in a research process.

17. (a) What is data processing? Explain its operations in detail. (validation, Editing, Coding, Classification. Tabulation).

Or

(b) List out the limitations of latin square design.

18. (a) What is hypothesis? How can you formulate and test the hypothesis? Give the advantages and disadvantages of testing of hypothesis.

Or

(b) What do you mean by level of significance? Explain the degree of freedom.

19. (a) What is report writing? Explain the process of writing the report.

Or

(b) Write short note on:

(i) Chi- square test

(ii) Z-test

(iii) T-test

(iv) F-test.

20. (a) How can artificial intelligence be applied to improve medical diagnostics? How does climate change research inform sustainable urban planning?

Or

(b) Explain the following with suitable examples:

(i) Acceptance and rejection (critical) region

(ii) Best critical region

(iii) Power of test

(iv) Level of significance

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C–6650

Sub. Code
96354B

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Fifth Semester

Nutrition and Dietetics

PAEDIATRIC DIETETICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. During adolescence, energy and nutrient needs
   (a) Reach a peak
   (b) Fall dramatically
   (c) Do not peak until adulthood
   (d) Fluctuate

2. Birth weight is doubled at _____of age.
   (a) 4-5 months (b) 7-8 months
   (c) 5-6 months (d) 10-12 months

3. The milk, cheese, and yogurt group are important for _____.
   (a) Strong bones (b) Teeth
   (c) Muscles (d) All of the above

4. Among adolescent girls _____ is a more prevalent deficiency.

(a) Iron (b) Calcium

(c) Zinc (d) Vitamin D

5. Iron RDA for children 1-3 years _____.

(a) 5 mg/day (b) 7 mg/day

(c) 8 mg/day (d) 10 mg/day

6. Which of the following diseases is caused by protein-energy malnutrition?

(a) Angina (b) Goiter

(c) Marasmus (d) Tuberculosis

7. Adolescence is a crucial time for _____.

(a) Mental development

(b) Physical development

(c) Bone development

(d) Skeletal system

8. Breast milk is high in _____.

(a) Protein

(b) Sugar

(c) Vitamins, growth factors

(d) All of the above

9. The neural tube is developed in the gestational period from

(a) 17 to 40 days (b) 17 to 50 days

(c) 17 to 30 days (d) 17 to 25 days

10. _____ is protein that forms connective tissues, bones and teeth.

(a) Collagen (b) Omega-3 FA

(c) Niacin (d) Pantothenic acid

Part B (5 × 5 = 25)

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

11. (a) Why are paediatric dietitians important?

Or

(b) How can parents assess the adequacy of an infant's nutrition?

12. (a) List the importance of immunization and its types.

Or

(b) Write the development of the gastrointestinal system.

13. (a) Describe the nutritional requirements during infancy.

Or

(b) What are the causes of severe acute malnutrition in young children?

14. (a) Describe the eating disorders of infants.

Or

(b) Write the inborn errors of metabolism in infants

15. (a) Mention about the production of infant formula.

Or

(b) Describe the recent advances in paediatrics.

Part C

(5 × 8 = 40)

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

16. (a) Detail about the food intolerance and allergy in infants.

Or

(b) Explain about the cognitive and developmental disorders.

17. (a) Explain the complications involved in low birth weight.

Or

(b) How to identify the paediatric health issues and their dietary management?

18. (a) Write about the infant nutrient assimilation and their microbiota.

Or

(b) Detail the weaning and supplementary foods for infants.

19. (a) How to manage allergy prevention through early nutrition?

Or

(b) Explain the factors involved in ADHD.

20. (a) Write the micronutrient deficiencies in children.

Or

(b) Discuss the complications of premature infants.

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C–6651

Sub. Code
96355A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Fifth Semester

Nutrition and Dietetics

FOOD PACKAGING AND MARKETING MANAGEMENT

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is the primary function of food packaging?

   (a) Aesthetic appeal

   (b) Protection and preservation

   (c) Cost reduction

   (d) Promotion of sales

2. Which type of packaging is designed for bulk handling and transportation?

   (a) Primary Packaging

   (b) Secondary Packaging

   (c) Tertiary Packaging

   (d) None of the above

3. _____ is the primary purpose of packaging materials.

(a) To increase product weight

(b) To protect and preserve products

(c) To enhance product color

(d) To reduce production costs

4. Which of the following is a characteristic of flexible packaging?

(a) Rigid structure

(b) Adaptability to product shape

(c) High weight

(d) Non-recyclable

5. _____ type of container is commonly used for radiation-stabilized foods due to its durability.

(a) Flexible containers

(b) Rigid containers

(c) Composite containers

(d) Paper bags

6. Biodegradable packaging materials, such as biopolymer-based edible films, are primarily designed to

(a) Increase plastic waste

(b) Be non-degradable

(c) Provide a sustainable alternative to traditional packaging

(d) Enhance the flavor of packaged food

7. _____ is the purpose of metallization in packaging for dehydrated products.

(a) To enhance aesthetic appeal

(b) To improve barrier properties against moisture and oxygen

(c) To reduce production costs

(d) To increase transparency

8. Which packaging technique is commonly used to create multilayer films?

(a) Stretch wrapping

(b) Co-extrusion

(c) Vacuum sealing

(d) Heat sealing

9. What is a common marketing strategy used in packaging to attract consumers?

(a) Using plain and simple designs

(b) Implementing eco-friendly materials

(c) Offering larger quantities at a higher price

(d) Adding excessive text on the labels

10. _____ regulation requires mandatory labeling provisions to protect consumer rights.

(a) Health claims regulation

(b) Environmental labelling

(c) Food labeling regulations

(d) Marketing strategy guidelines

Part B (5 × 5 = 25)

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

11. (a) Describe types of packaging.

Or

(b) Mention the general characteristics of packaging material.

12. (a) State the significance of containers.

Or

(b) Write the advantages of flexible packaging.

13. (a) Elucidate the biodegradable packaging material.

Or

(b) Explain the biopolymer based edible film.

14. (a) Describe co-extrusion of multilayer films.

Or

(b) Write a short note on micro-ovenable containers.

15. (a) Explain the importance of labelling.

Or

(b) Write an account current trends in marketing.

Part C

(5 × 8 = 40)

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

16. (a) Elaborate the role of packaging in food industry.

Or

(b) Describe in detail about tetra packs and its application.

17. (a) Criticize in detail about modern packaging materials and forms.

Or

(b) Packaging materials are reducing food waste-Justify.

18. (a) Explain in detail on general methods for establishing radiation stabilization.

Or

(b) Elaborate the measurement of radiations.

19. (a) Discuss in detail about different types of packages of dehydrated products.

Or

(b) Write in detail about modified and controlled atmosphere packaging.

20. (a) Describe in detail about packaging of finished goods.

Or

(b) Explain in detail about marketing strategies used in packaging and labelling.

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C–6652

Sub. Code
96355B

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Fifth Semester

Nutrition and Dietetics

TRADITIONAL HERBS IN FOOD SCIENCE

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following plants contains drug at its bark curing heart disease

   (a) Mango (b) Cinchona

   (c) Arjuna (d) Tobacco

2. Which part of the plant clove can be used for treatment of toothache?

   (a) Stem (b) Seed

   (c) Bud (d) Fruit

3. Rutheninium red is used to detect

   (a) Gum (b) Lipids

   (c) Wax (d) Mucilage

4. Soxlet apparatus is used for

   (a) Filteration (b) Extraction

   (c) Clarification (d) Size Reduction

5. The volatile oils are complex mixtures of

(a) Mono-and sesquiterpenes and phenylpropane derivatives

(b) Mono-and diterpene alcohols and ethers

(c) Sesquiterpenes and other aromatic compounds

(d) Monoterpene acids and lactones

6. Which of the following is used as a stationary phase in TLC?

(a) Gas (b) Liquid

(c) Solid (d) Gel

7. Which of the following methods is not involved in Post-harvesting technology.

(a) Drying and wet salting

(b) Boiling and Drying

(c) Chilling

(d) Filtering

8. Which of the following is not the property of the fermented food?

(a) Highly Nutritious (b) Toxic

(c) Anti-toxicity (d) Anti-nutrient

9. Bock beer originated in ————————.

(a) Germany (b) UK

(c) USA (d) Belgium

10. Sauerkraut is ————————.

(a) a cauliflower (b) a potato

(c) a cabbage (d) a tomato

Part B (5 × 5 = 25)

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

11. (a) Discuss about herbal nutraceuticals and its advantages in food science.

Or

(b) Describe the role and scope of traditional herbs and spices in food and medicine.

12. (a) Write a brief notes exomorphic characters of herbs.

Or

(b) Explain the significance of taxonomic evidence in the identification of medicinal herbs

13. (a) Describe the methods for detecting alkaloids and glycosides in herbal extracts.

Or

(b) How to identify phenolics and flavonoids content of the medical plants.

14. (a) Differentiate between reproductive and vegetative cultivation methods for herbs.

Or

(b) Outline the steps involved in the harvesting and drying of medicinal herbs.

15. (a) Explain the process of herbal fermentation in beverages.

Or

(b) Discuss about the uses of herbs for colouring and flavouring beverages.

Part C

(5 × 8 = 40)

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

16. (a) Discuss the historical significance of traditional herbs in food science and medicine.

Or

(b) Write the scope and applications of popular herbs in India.

17. (a) Define pharmacognosy. Discuss its importance in the identification and study of medicinal herbs.

Or

(b) Explain the taxonomic and endomorphic evidence used in identifying herbs.

18. (a) Describe the methods for detecting alkaloids, tannins and glycosides in herbal extracts.

Or

(b) Explain the applications of Thin Layer Chromatography (TLC) in the identification of herbal phytochemicals.

19. (a) How do chromatographic techniques (HPLC, TLC) help in herbal standardization? Explain in detail.

Or

(b) Explain the collection, drying, and stabilization processes involved in herb preservation.

20. (a) Explain the role of herbs and grains in preparing herbal fermented beverages.

Or

(b) Discuss the process of preparing kombucha and herbal beer, highlighting key techniques.

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B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Fourth Semester

Nutrition and Dietetics

DIETETICS — I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is dietetics?

2. Write a short note on soft diet?

3. List out the feeding methods.

4. Define IDA.

5. Define Underweight.

6. Write the counselling measures for overweight.

7. What is hepatic coma?

8. Define galactosemia.

9. What is disability?

10. Write the nutritional care for special child.

Part B (5 × 5 = 25)

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

11. (a) What are the responsibilities of a specific dietitian?

Or

(b) Write the advantages of high protein diet.

12. (a) Describe the TPN formula for adults.

Or

(b) Write the causes, risk factors and dietary modification for febrile conditions.

13. (a) Describe the Dietary modification and diet planning for Gastritis.

Or

(b) Explain the causes of haemorrhoids condition.

14. (a) Illustrate the symptoms, dietary modification and diet planning for Hepatitis.

Or

(b) Determine the conditions of phenylketonuria.

15. (a) Write the deficit disorder for hyperactivity.

Or

(b) Describe the nutritional needs and modification down's syndrome.

Part C

(3 × 10 = 30)

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

16. (a) Briefly explain the modified therapeutic diets.

Or

(b) Elaborate the Enteral feeding methods.

17. (a) Write briefly about causes, pathogenesis, dietary modification and diet planning for peptic ulcer and constipation condition.

Or

(b) Explain about the causes, signs and symptoms, dietary modification and diet planning for cirrhosis of liver.

18. (a) Describe about the nutritional needs and their modification for autism and cerebral palsy.

Or

(b) Write about the causes of gallbladder disease and their diet therapy.

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