**ICSE Grade IV Science**

**Chapters Covered:**

1. **Human Body: Food We Eat**
2. **Human Body: The Teeth**
3. **Human Body: Digestive and Excretory Systems**

**Chapter 1: Human Body – Food We Eat**

**Exercises with Answers**

**A. Give two examples for the following (with more than two examples for better learning):**

1. **Essential substances present in the food: Carbohydrates, Proteins, Fats, Vitamins, Minerals**
2. **Main types of carbohydrates: Sugar, Starch, Glucose, Sucrose**
3. **Body-building foods: Pulses, Eggs, Milk, Paneer, Fish**
4. **Main nutrients in protective food: Vitamins (A, B, C), Minerals (Iron, Calcium, Iodine)**

**B. Fill in the blanks:**

1. **Young children should include more protein-rich foods in their diet.**
2. **Fats provide more energy than carbohydrates.**
3. **Calcium is needed for the formation of bones and teeth.**
4. **Water is the essential part of the blood and other body fluids.**
5. **Iron is needed for the formation of blood.**

**C. Multiple Choice Questions:**

1. **Function(s) of food: a) Food gives us strength to work and play.  
   b) Food helps us to grow.  
   c) Food helps us to remain healthy and strong.  
   d) All of these ✅**
2. **Substance that removes waste from body: a) Carbohydrates  
   b) Roughage ✅  
   c) Vitamins  
   d) Proteins**
3. **Foods that help build muscles: a) Protein-rich foods ✅  
   b) Energy-giving foods  
   c) Vitamins and minerals  
   d) Roughage and water**
4. **Method for storing raw peas: a) Deep freezing ✅  
   b) Canning  
   c) Pickling  
   d) Refrigeration**

**D. Assertion and Reasoning (with explanation):**

1. **A: Carbohydrates give energy.  
   R: Energy-giving foods are rich in carbohydrates.  
   → ✅ Both A and R are True  
   Explanation: Carbohydrates like rice, bread, and sugar provide energy, and energy-rich foods contain high carbohydrates.**
2. **A: Protein-rich foods are body-building.  
   R: They keep our body warm.  
   → ✅ A is True, R is False  
   Explanation: Proteins help build body tissues like muscles and bones. Fats, not proteins, help in keeping the body warm.**

**E. Fill in the blanks (MCQ style):**

1. **Oil is a rich source of fat.**
2. **Egg is a rich source of protein.**
3. **Roughage cannot be digested by our body.**
4. **Cooked food should be kept covered.**
5. **Mango is preserved by pickling.**

**F. Name the following:**

1. **Substances needed for growth and energy: Nutrients**
2. **Protein-rich foods: Pulses, Eggs, Meat, Paneer**
3. **Diet with all nutrients, roughage, water: Balanced diet**
4. **Method of food preservation using sun: Drying**
5. **Foods rich in vitamins and minerals: Fruits, Vegetables**

**G. Short Answers:**

1. **Why do we need food? → To grow, stay healthy and gain energy.**
2. **What are nutrients? → Substances in food that help in growth and health.**
3. **Name the five nutrients: Carbohydrates, Proteins, Fats, Vitamins, Minerals**
4. **Name two foods rich in iron: Spinach, Watermelon**
5. **Why is roughage important? → Helps in easy removal of waste.**
6. **Why drink enough water? → Helps digestion, keeps body healthy.**
7. **Why do children need protein? → For growth and building muscles.**
8. **Why store food properly? → To avoid spoilage and stay healthy.**

**H. Long Answers:**

1. **Foods for a picnic (energy): Bread, bananas, nuts – energy-giving**
2. **Protective foods: Fruits, vegetables – rich in vitamins, prevent disease**
3. **Ways to avoid food wastage in party: Take small servings, store leftovers**
4. **Importance of plants: Give oxygen, food, bind soil, provide medicines**

**Chapter 2: Human Body – The Teeth**

**Exercises with Answers**

**A. Multiple Choice Questions:**

1. **Process of teeth emerging: a) Breaking  
   b) Digestion  
   c) Swelling  
   d) Teething ✅**
2. **Adults have: a) 16 permanent teeth  
   b) 20 permanent teeth  
   c) 28 permanent teeth  
   d) 32 permanent teeth ✅**
3. **Mineral for strong teeth: a) Calcium ✅  
   b) Iron  
   c) Iodine  
   d) Phosphorus**
4. **Layer below enamel: a) Dentine ✅  
   b) Pulp  
   c) Crown  
   d) Root**
5. **What should we avoid to keep our teeth healthy? a) Fizzy drinks  
   b) Sugar  
   c) Sweets  
   d) All of the above ✅**

**B. Assertion and Reasoning:**

1. **A: Milk teeth fall at age 6. R: Bigger teeth replace them. → ✅ Both A and R are True**
2. **A: Floss daily. R: Cleans between teeth. → ✅ Both A and R are True**

**C. Fill in the blanks (MCQ style):**

1. **Milk teeth are temporary.**
2. **Big, flat, broad teeth: Molars.**
3. **Part above gum: Crown.**
4. **Plaque leads to tooth decay.**

**D. Name the following:**

1. **Part inside gum: Root**
2. **Innermost tooth layer: Pulp**
3. **Hardest outer layer: Enamel**
4. **Doctor for dental care: Dentist**

**E. Give two examples (with more examples):**

1. **Care for teeth: Brushing, Flossing, Rinsing after meals**
2. **Foods for healthy teeth: Milk, Cheese, Yogurt, Leafy vegetables**
3. **Tooth diseases from acid: Tooth Decay, Cavities, Dental Caries**
4. **Foods that cause decay: Sweets, Fizzy drinks, Chocolates**

**F. Short Answers:**

1. **Helps bite and chew: Teeth**
2. **Two sets of teeth: Milk teeth, Permanent teeth**
3. **Function of canines: Tear food**
4. **Why yellow layer appears? → Improper brushing causes plaque.**
5. **Importance of dental visit: Detect and prevent cavities early.**

**G. Long Answers:**

1. **Shape and function of 4 teeth:**
   * **Incisors: Cut**
   * **Canines: Tear**
   * **Premolars: Crush**
   * **Molars: Grind**
2. **Parts of a tooth: Crown, Root, Enamel, Dentine, Pulp**
3. **Dental care tips: Brush twice, Floss, Eat less sugar**
4. **Food for healthy teeth: Milk (Calcium), Egg (Vitamin D), Avoid fizzy drinks**

**Chapter 3: Human Body – Digestive and Excretory Systems**

**Exercises with Answers**

**A. Multiple Choice Questions:**

1. **Digestion starts in: a) Stomach  
   b) Large intestine  
   c) Small intestine  
   d) Mouth ✅**
2. **Nutrient absorption in: a) Small Intestine ✅  
   b) Large Intestine  
   c) Stomach  
   d) Oesophagus**
3. **Water absorption organ: a) Large Intestine ✅  
   b) Small Intestine  
   c) Stomach  
   d) Liver**
4. **Urine stored in: a) Ureter  
   b) Kidney  
   c) Urethra  
   d) Urinary Bladder ✅**
5. **Needed for bowel movement: a) Enzyme  
   b) Fibre ✅  
   c) Protein  
   d) Calcium**

**B. Assertion and Reasoning:**

1. **A: Faeces stored in rectum. R: Rectum is last digestive part → ✅ Both A and R are True**
2. **A: Urine formed in kidneys. R: Contains useful substances → ✅ A is True, R is False**

**C. Fill in the blanks:**

1. **Chewed food reaches stomach via oesophagus.**
2. **Liver secretes digestive juices.**
3. **System removing waste: Excretory system**
4. **Waste removed by kidneys**
5. **Urine formed in kidneys**

**D. Match the following:**

1. **Churning – b) Stomach**
2. **Saliva – a) Enzyme**
3. **Food pipe – d) Oesophagus**
4. **Kidney – e) Urine**
5. **Fibre – c) Roughage**

**E. Short Answers:**

1. **Digestion: Breaking food into simpler form**
2. **Tongue: Mixes saliva and helps swallowing**
3. **Undigested food: Becomes faeces in large intestine**
4. **Excretion: Removing waste from body**
5. **Two waste products: Urine, Faeces**

**F. Long Answers:**

1. **Digestive organs and their functions – Mouth (chew), Stomach (churn), Intestines (absorb)**
2. **Excretory system organs – Kidneys (filter), Ureters (carry), Bladder (store), Urethra (release)**
3. **Healthy habits for digestion – Eat fibre, drink water, avoid junk food**

**Practice diagrams:**

1. **Teeth Diagram – Show all 4 types of teeth: Incisors, Canines, Premolars, Molars. Label each type in both upper and lower jaws.**
2. **Digestive System – Draw and label: Mouth, Food pipe (Oesophagus), Stomach, Liver, Pancreas, Small Intestine, Large Intestine, Rectum, Anus.**
3. **Excretory System – Draw and label: Kidneys, Ureters, Urinary Bladder, Urethra.**

**👉 Practice drawing these 3 diagrams neatly and label every part clearly. These are high-scoring diagram-based questions in ICSE exams.**

Chapter 1: Human Body - Food We Eat

G. Short Answer Questions (Complete Sentences)

1. **Why do we need food?**  
   We need food to grow, stay healthy, and get energy for our daily activities.
2. **What are nutrients?**  
   Nutrients are essential substances present in food that help our bodies grow, stay healthy, and function properly like Protein, fats etc.
3. **Name the five nutrients.**  
   The five essential nutrients are carbohydrates, proteins, fats, vitamins, and minerals.
4. **Name two foods rich in iron.**  
   Spinach and watermelon are excellent sources of iron.
5. **Why is roughage important?**  
   Roughage is important because it helps our body remove waste materials easily and prevents constipation.
6. **Why should we drink enough water every day?**  
   We should drink enough water because it helps in digestion, keeps our body hydrated, and helps transport nutrients.
7. **Why do children need more protein-rich food?**  
   Children need more protein-rich food because proteins help in their growth and building strong muscles.
8. **Why should we store food properly?**  
   We should store food properly to prevent spoilage, avoid wastage, and protect ourselves from food-borne illnesses.

H. Long Answer Questions (Complete Sentences)

1. **Suggest energy-giving foods for a school picnic.**  
   For a school picnic, we should pack energy-giving foods like whole wheat bread, bananas, and nuts. These foods contain carbohydrates and healthy fats that provide sustained energy for playing and activities throughout the day. Sandwiches with vegetables, fruits like apples or oranges, and some dry fruits would make a balanced and energizing picnic meal.
2. **Explain the importance of protective foods with examples.**  
   Protective foods are rich in vitamins and minerals that help our body fight diseases and stay healthy. Fruits like oranges and guavas contain vitamin C that boosts our immunity. Vegetables like spinach and carrots provide iron and vitamin A for good eyesight and healthy blood. Milk and dairy products give us calcium for strong bones. Eating a variety of these protective foods daily helps our body grow properly and protects us from illnesses.
3. **How can we avoid food wastage at parties?**  
   We can avoid food wastage at parties by:
   * Planning the menu carefully according to the number of guests
   * Serving small portions initially and allowing seconds if needed
   * Using proper serving utensils to control portion sizes
   * Storing leftovers properly in airtight containers in the refrigerator
   * Donating extra food to those in need instead of throwing it away
4. **Explain the importance of plants in our environment.**  
   Plants are extremely important for our environment because:
   * They produce oxygen through photosynthesis, which we need to breathe
   * They provide us with food like fruits, vegetables, and grains
   * Their roots bind the soil and prevent erosion
   * They give us medicines, wood, paper, and many other useful products
   * Plants help maintain the balance in nature by absorbing carbon dioxide
   * They provide habitat for many animals and birds  
     We should care for plants by watering them regularly, adding manure, and protecting them from pests.

Chapter 2: Human Body - The Teeth

F. Short Answer Questions (Complete Sentences)

1. **What helps us to bite and chew food?**  
   Our teeth help us to bite and chew food properly before swallowing.
2. **Name the two sets of human teeth.**  
   Humans have two sets of teeth: temporary milk teeth and permanent teeth.
3. **What is the function of canines?**  
   Canine teeth are pointed and help in tearing tough food like meat.
4. **Why does a yellowish layer appear on teeth?**  
   A yellowish layer called plaque appears on teeth when we don't brush properly, allowing germs to grow.
5. **Why is it important to visit the dentist regularly?**  
   Regular dental visits are important to detect tooth problems early, get professional cleaning, and prevent serious tooth decay.

G. Long Answer Questions (Complete Sentences)

1. **Describe the four types of teeth and their functions.**  
   Humans have four types of teeth with different shapes and functions:
   * **Incisors**: These are flat, sharp teeth at the front (8 total) that help in cutting food.
   * **Canines**: These pointed teeth (4 total) help in tearing tough food.
   * **Premolars**: These broader teeth (8 total) help in crushing food.
   * **Molars**: The largest, flattest teeth (12 total) at the back help in grinding food thoroughly.  
     Together, these different types of teeth help us chew our food properly for good digestion.
2. **Explain the parts of a tooth with a diagram.**  
   A tooth has three main parts:
   * **Crown**: The visible white part above the gums, covered by hard enamel.
   * **Neck**: The part where the crown meets the root.
   * **Root**: The part embedded in the jawbone, below the gums.  
     Inside, a tooth has three layers:
   * **Enamel**: The hardest, outermost white layer.
   * **Dentine**: The yellowish middle layer.
   * **Pulp**: The innermost soft part containing nerves and blood vessels.  
     [Diagram would show these parts with labels]
3. **How should Ruhi take care of her teeth if she has toothache from eating sweets?**  
   If Ruhi has toothache from eating sweets, she should:
   * Brush gently twice daily with fluoride toothpaste
   * Rinse her mouth with warm salt water
   * Avoid eating more sweets and sticky foods
   * Use dental floss to clean between teeth
   * Visit a dentist immediately for proper treatment
   * Apply a cold compress if there's swelling
   * Eat healthy foods like milk, fruits and vegetables instead of sweets
4. **What foods help keep teeth strong and healthy?**  
   Foods that keep teeth strong include:
   * Milk, cheese and yogurt for calcium
   * Fruits like apples that clean teeth naturally
   * Vegetables like carrots that stimulate gums
   * Foods rich in vitamin D like eggs and fish
   * Nuts and seeds that provide minerals  
     We should avoid sugary foods, sticky candies, and fizzy drinks that damage tooth enamel.

Chapter 3: Human Body - Digestive and Excretory Systems

E. Short Answer Questions (Complete Sentences)

1. **What is digestion?**  
   Digestion is the process of breaking down food into simpler substances that our body can absorb and use.
2. **What is the role of the tongue in digestion?**  
   The tongue helps mix food with saliva, forms it into a bolus, and pushes it down the throat for swallowing.
3. **What happens to undigested food?**  
   Undigested food moves to the large intestine where water is absorbed, and the remaining waste is expelled as feces.
4. **What is excretion?**  
   Excretion is the process of removing waste products from the body through urine, sweat, and feces.
5. **Name two waste products of our body.**  
   The two main waste products of our body are urine (liquid waste) and feces (solid waste).

F. Long Answer Questions (Complete Sentences)

1. **Describe the digestive system organs and their functions.**  
   The digestive system consists of:
   * **Mouth**: Where food is chewed and mixed with saliva.
   * **Oesophagus**: The food pipe that carries food to stomach.
   * **Stomach**: Churns food with digestive juices.
   * **Small intestine**: Absorbs nutrients from digested food.
   * **Large intestine**: Absorbs water and forms feces.
   * **Liver**: Produces bile to digest fats.
   * **Pancreas**: Makes enzymes for digestion.
   * **Rectum and anus**: Expel waste from body.  
     Together, these organs break down food and absorb nutrients our body needs.
2. **Explain the excretory system organs and their functions.**  
   The excretory system includes:
   * **Kidneys**: Filter blood and remove waste as urine.
   * **Ureters**: Tubes carrying urine from kidneys to bladder.
   * **Urinary bladder**: Stores urine temporarily.
   * **Urethra**: Releases urine out of the body.  
     This system removes harmful wastes, maintains water balance, and keeps our blood clean.
3. **What healthy habits promote good digestion?**  
   Good digestion requires:
   * Chewing food thoroughly before swallowing
   * Eating meals at regular times
   * Drinking plenty of water daily
   * Including fiber-rich foods in diet
   * Avoiding overeating and junk food
   * Staying physically active
   * Managing stress through proper rest  
     These habits help food move smoothly through the digestive system.