रेलवे भर्ती बोर्ड / RAILWAY RECRUITMENT BOARD

सी ई एन नं. - 04/2024 - CEN No. - 04/2024

Test Date	30/04/2025
Test Time	9:00 AM - 10:30 AM
Subject	DIETICIAN (Level 7)

*** Note**
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : **General Ability**

Q.1 **What is the approximate current when a potential difference of 0.5 V is applied across a nichrome wire having length 1 m and cross-sectional area 2 mm^2? (Consider the resistivity of nichrome wire as $1 \times 10^{-6} \Omega$ m.)**

Ans
✗ 1. 2 A
✓ 2. 1 A
✗ 3. 20 A
✗ 4. 10 A

Q.2 **Which of the following compounds does NOT belong to the same homologous series as the others?**

Ans
✗ 1. Methanol (CH_3OH)
✗ 2. Propanol (C_3H_7OH)
✗ 3. Ethanol (C_2H_5OH)
✓ 4. Ethanoic acid (CH_3COOH)

Q.3 **In the Delhi Legislative Assembly election held on 5 February 2025, which party emerged victorious?**

Ans
✗ 1. Aam Aadmi Party
✓ 2. Bharatiya Janata Party
✗ 3. Indian National Congress
✗ 4. Bahujan Samaj Party

Q.4 **What is the maximum value that must be assigned to A so that the 8-digit number 866A2316 is divisible by 4?**

Ans
✗ 1. 8
✓ 2. 9
✗ 3. 4
✗ 4. 7

Q.5 **Which flagship programme has been specifically designed to reduce rural poverty and guarantee wage employment in India?**

Ans
✗ 1. Make in India
✗ 2. Skill India
✓ 3. MGNREGA
✗ 4. Startup India

Q.6 A manufacturer sells a product to a wholesaler at a profit of 25%. The wholesaler, in turn, sells it to a retailer at a profit of 28%, and the retailer sells it to a customer at a profit of 25%. If the customer pays ₹122, find the cost price (in ₹) for the manufacturer.

Ans
- ✔ 1. 61
- ✘ 2. 64
- ✘ 3. 60
- ✘ 4. 59

Q.7 Regarding the relationship between the Fundamental Rights (FR) and the Directive Principles of State Policy (DPSP) in India, which of the following assertions is true?

Ans
- ✘ 1. FR are subordinate to DPSP in case of any conflict.
- ✔ 2. Both serve as independent pillars; however, FR are legally enforceable while DPSP cannot be.
- ✘ 3. DPSP can be enforced directly in the courts, similar to FR.
- ✘ 4. DPSP are justiciable and can override FR when necessary.

Q.8 What role do gases used in and discharged from refrigerators and air conditioners play in air pollution?

Ans
- ✘ 1. They increase the levels of oxygen in the atmosphere.
- ✘ 2. They contribute to smog formation in urban areas.
- ✘ 3. They help in the natural cooling of the Earth's surface.
- ✔ 4. They are responsible for the depletion of the ozone layer.

Q.9 Which of the following properties of Plaster of Paris makes it useful for making molds and casts?

Ans
- ✘ 1. It expands on setting.
- ✘ 2. It reacts with acids to form carbon dioxide.
- ✘ 3. It remains soft after drying.
- ✔ 4. It hardens when mixed with water.

Q.10 Which of the following provisions regarding reservation in Panchayati Raj Institutions in India is mandated by the 73rd Constitutional Amendment Act?

Ans
- ✘ 1. At least 50% of the seats are reserved for Scheduled Castes.
- ✘ 2. No seats are to be reserved for any category.
- ✘ 3. At least 50% of the seats are reserved for economically weaker sections.
- ✔ 4. Not less than one-third of the total seats for direct election must be reserved for women.

Q.11 What should come in place of the question mark (?) in the given series based on the English alphabetical order?

YFO BJR ENU HRX ?

Ans
- ✘ 1. LUB
- ✘ 2. LVC
- ✔ 3. KVA
- ✘ 4. MTZ

Q.12 For a spherical mirror with _____ aperture, the principal focus lies midway between the pole and the centre of curvature.

Ans
- ✘ 1. any
- ✘ 2. infinite
- ✔ 3. a small
- ✘ 4. a large

Q.13 The Brihadeshwara temple, built by the Cholas, is located in which city?

Ans
- ✔ 1. Thanjavur
- ✘ 2. Kanchipuram
- ✘ 3. Madurai
- ✘ 4. Puri

Q.14 Between which two ranges does the rift valley of the Narmada River lie?

Ans
- ✘ 1. Western Ghats and Eastern Ghats
- ✘ 2. Aravalli and Nilgiri
- ✘ 3. Pir Panjal and Mahabharata
- ✔ 4. Vindhyas and Satpuras

Q.15 Identify the correct statements regarding mixtures and compounds.
1. The components of a mixture retain their individual properties, whereas the components of a compound do not.
2. A compound has a fixed composition, but a mixture can have variable proportions of its components.
3. Mixtures can only be separated by chemical methods, while compounds can be separated by physical methods.

Ans
- ✔ 1. Only 1 and 2 are correct
- ✘ 2. All three statements 1, 2 and 3 are correct
- ✘ 3. Only 2 and 3 are correct
- ✘ 4. Only 1 and 3 are correct

Q.16 Which of the following substances will not be broken down by the action of bacteria?

Ans
- ✔ 1. Plastics
- ✘ 2. Newspapers
- ✘ 3. Fruits
- ✘ 4. Cotton

Q.17 What will come in the place of the question mark '(?)' in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?

$112 \times 2 \div 4 - 12 + 13 = ?$

Ans
- ✘ 1. 250
- ✔ 2. 223
- ✘ 3. 112
- ✘ 4. 241

Q.18 A can lay railway track between two given stations in 14 days and B can do the same job in 28 days. With the help of C, they did the job in 4 days only. Then, C alone can do the job in:

Ans
- ✔ 1. 7 days
- ✘ 2. 9 days
- ✘ 3. 8 days
- ✘ 4. 10 days

Q.19 Where was the 4^{th} edition of the India-Malaysia joint military exercise Harimau Shakti held in 2024?

Ans
- ✘ 1. Mizoram, India
- ✘ 2. Kuala Lumpur, Malaysia
- ✔ 3. Bentong Camp, Pahang district, Malaysia
- ✘ 4. Port Blair, India

Q.20 Find the number of bricks, each measuring 21 cm × 48 cm × 20 cm, required to construct a wall 56 m long, 14 m high and 0.4 m thick, while the sand and cement mixture occupies 10% of the total volume of wall.

Ans

✗ 1. 13900

✗ 2. 14300

✗ 3. 14100

✓ 4. 14000

Q.21 Which of the following organisms break down biodegradable substances?

Ans

✗ 1. Chordates and Green plant

✗ 2. Bacteria and Green plant

✗ 3. Fungi and Green plant

✓ 4. Bacteria and Fungi

Q.22 Which Indian cricketer was nominated for the Laureus Comeback of the Year Award in February 2025?

Ans

✓ 1. Rishabh Pant

✗ 2. Jasprit Bumrah

✗ 3. Ravindra Jadeja

✗ 4. Virat Kohli

Q.23 Who among the following chaired the State Reorganisation Commission after India's independence in the early 1950s?

Ans

✗ 1. Sardar Patel

✗ 2. Jawaharlal Nehru

✗ 3. Dr. BR Ambedkar

✓ 4. Saiyid Fazl Ali

Q.24 5 bags and 18 pens together cost ₹1710, whereas 4 bags and 13 pens together cost ₹1256. The cost of 12 bags exceeds the cost of 6 pens by:

Ans

✗ 1. ₹173

✓ 2. ₹168

✗ 3. ₹164

✗ 4. ₹169

Q.25 Seven boxes A, B, E, F, G, N and O are kept one over the other but not necessarily in the same order. Only B is kept above A. Only E is kept between A and F. Only G is kept below O. How many boxes are kept between N and G?

Ans

✓ 1. One

✗ 2. Two

✗ 3. Three

✗ 4. Four

Q.26 Town E is to the west of town B. Town C is to the east of town B. Town A is to the north of town B. Town F is to the north of town C. Town A is to the west of town F. What is the position of town F with respect to town E?

Ans

✗ 1. North-west

✗ 2. South-west

✓ 3. North-east

✗ 4. South

Q.27 **Which of the following is NOT correctly matched between diseases and the nature of infective agents?**

Ans

✗ 1. Syphilis - Bacterial infection

✗ 2. Gonorrhoea - Bacterial infection

✓ 3. AIDS - Bacterial infection

✗ 4. Warts - Virus infection

Q.28 **The Sun is visible _____ before actual sunrise due to atmospheric refraction.**

Ans

✗ 1. 4 minutes

✗ 2. 3 minutes

✗ 3. 1 minute

✓ 4. 2 minutes

Q.29 **Which of the following movements takes place without thinking about it?**

Ans

✗ 1. Cat running

✓ 2. Pulling hand back from the flame

✗ 3. Buffaloes chewing cud

✗ 4. Children playing

Q.30 **Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete?**

SOW21, XTB37, CYG53, HDL69, ?

Ans

✗ 1. MKQ85

✓ 2. MIQ85

✗ 3. NIQ85

✗ 4. MIO85

Section : **Professional Ability**

Q.1 **Which metabolic change is most frequently observed in chronic kidney disease (CKD) as a result of impaired kidney function?**

Ans

✓ 1. Accumulation of nitrogenous waste products in the blood

✗ 2. Decreased breakdown of lipids

✗ 3. Enhanced renal glucose reabsorption

✗ 4. Increased production of ketone bodies

Q.2 **Which of the following statements accurately reflects a complex anatomical feature of the small intestine that enhances nutrient absorption?**

Ans

✗ 1. Villi in the large intestine contain capillaries and lacteals for nutrient absorption.

✗ 2. The muscularis externa layer is thicker in the duodenum to assist in mechanical digestion.

✗ 3. Peyer's patches in the jejunum increase surface area for lipid absorption.

✓ 4. Circular folds (plicae circulares) in the jejunum and ileum slow chyme movement and increase absorption.

Q.3 **Identify the nutritional deficiency that presents the highest risk in long-term postoperative care following Roux-en-Y gastric bypass (RYGB) surgery.**

Ans

✗ 1. Vitamin A deficiency

✓ 2. Vitamin B12 deficiency

✗ 3. Iron deficiency

✗ 4. Calcium deficiency

Q.4 **The most appropriate dietary strategy for managing symptoms in patients with active Crohn's disease during a flare-up is:**

Ans

✗ 1. High-fiber diet with raw vegetables and whole grains to improve bowel regularity

✓ 2. Low-residue, low-lactose diet to reduce intestinal irritation and diarrhea

✗ 3. High-fat, high-protein diet to compensate for nutrient malabsorption

✗ 4. Gluten-free and casein-free diet to reduce inflammation caused by autoimmune reactions

Q.5 **What is a primary characteristic that distinguishes a soft diet from a full liquid diet in clinical nutrition?**

Ans

✓ 1. A soft diet includes solid foods that are easy to chew, while a full liquid diet consists of liquids and foods that are liquid at room temperature, excluding solid foods.

✗ 2. A soft diet is made up entirely of pureed foods, while a full liquid diet includes whole foods that require chewing.

✗ 3. A soft diet consists of foods that require little to no chewing, whereas a full liquid diet includes only foods in liquid form at room temperature.

✗ 4. A soft diet is used exclusively for patients with swallowing difficulties, whereas a full liquid diet is used only for patients with gastrointestinal disorders.

Q.6 **Which of the following is a primary goal of health programs under Primary Health Care (PHC)?**

Ans

✗ 1. To offer health services only for urban populations

✗ 2. To provide specialized hospital treatments for chronic diseases

✓ 3. To improve community health through preventive, promotive, and curative services

✗ 4. To focus exclusively on pharmaceutical interventions for disease control

Q.7 **Which of the following endocrine glands secretes both peptide and steroid hormones, and plays a critical role in regulating both metabolic rate and calcium homeostasis?**

Ans

✗ 1. Pituitary gland

✗ 2. Adrenal gland

✗ 3. Pancreas

✓ 4. Thyroid gland

Q.8 **Adolescents undergoing rapid linear growth require increased intake of certain micronutrients to support skeletal development. Select the combination that best supports bone mineralization and long-term bone health during this critical period of growth:**

Ans

✗ 1. Magnesium and Vitamin B6

✓ 2. Calcium and Vitamin D

✗ 3. Zinc and Vitamin C

✗ 4. Iron and Folate

Q.9 **The biochemical marker that is considered most specific and sensitive for diagnosing early protein-energy malnutrition (PEM) in a hospitalised patient is:**

Ans

✗ 1. Haemoglobin concentration

✗ 2. Serum albumin

✗ 3. Total lymphocyte count

✓ 4. Prealbumin (transthyretin)

Q.10 **Which of the following is an example of a phytochemical known for its antioxidant properties?**

Ans

✗ 1. Vitamin B12

✓ 2. Lycopene

✗ 3. Calcium

✗ 4. Omega-3 fatty acid

Q.11 **Which of the following molecules is the primary energy currency of the cell that directly powers cellular work?**

Ans

✗ 1. Glucose

✗ 2. Nicotinamide adenine dinucleotide (NAD)

✓ 3. Adenosine triphosphate (ATP)

✗ 4. Pyruvate

Q.12 **Blood is classified as a connective tissue because it:**

Ans

✗ 1. comprises cells suspended in a fibrous matrix, similar to bone tissue

✗ 2. primarily functions in immune defense via its white blood cells, rather than connecting tissues

✗ 3. does not have an extracellular matrix, making it distinct from other connective tissues

✓ 4. circulates throughout the body, connecting various tissues by transporting nutrients, gases and waste

Q.13 **Which of the following nutrient interactions is MOST critical to monitor in a patient with Type 2 Diabetes Mellitus who is also prescribed metformin and following a calorie-restricted, plant-based diet?**

Ans

✗ 1. Excessive vitamin D intake can reduce the efficacy of metformin

✗ 2. High intake of dietary fiber may increase risk of hypoglycemia

✗ 3. Iron absorption is enhanced by plant-based foods and metformin

✓ 4. Inadequate vitamin B12 absorption due to metformin and low animal product intake

Q.14 **Which of the following nutrients plays a key role in immune function and wound healing and is often provided in higher amounts during the nutritional management of burn patients?**

Ans

✗ 1. Thiamine

✗ 2. Fluoride

✗ 3. Vitamin K

✓ 4. Zinc

Q.15 **In addition to providing energy and promoting growth, food plays a critical role in maintaining physiological balance. Which of the following statements most accurately describes one of the lesser-known functions of food in the body?**

Ans

✗ 1. Food exclusively provides macronutrients that are used solely for energy production, with no impact on cell signalling.

✗ 2. The primary function of food is to supply water to the body; all other functions are secondary.

✗ 3. Food mainly supports structural integrity by providing materials for the body's physical framework, with little effect on metabolic processes.

✓ 4. Certain foods act as biological regulators, supporting enzymatic activity and hormone function that contribute to homeostasis.

Q.16 **Which of the following is a common dietary recommendation immediately following bariatric surgery to prevent complications and ensure adequate nutrition?**

Ans

✗ 1. High-fat diet

✓ 2. Liquid diet

✗ 3. High-fiber diet

✗ 4. Low-protein diet

Q.17 **In diabetic ketoacidosis (DKA), which of the following metabolic alterations primarily contributes to the formation of ketone bodies?**

Ans

✗ 1. Decreased hepatic glucose production due to elevated insulin levels

✓ 2. Increased breakdown of fatty acids leading to increased acetyl-CoA production

✗ 3. Decreased fatty acid oxidation due to insufficient insulin

✗ 4. Enhanced glycolysis and subsequent increased pyruvate production

Q.18 **What is the distinguishing feature that sets nutraceuticals apart from conventional food and pharmaceutical drugs?**

Ans

✗ 1. Nutraceuticals must be prescribed by licensed healthcare professionals

✓ 2. Nutraceuticals exert physiological benefits and may prevent or treat disease without being classified as drugs

✗ 3. Nutraceuticals are always synthetic compounds designed to mimic nutrients

✗ 4. Nutraceuticals provide energy and macronutrients necessary for daily metabolism

Q.19 **Which of the following enzymes is essential for the conversion of dietary fat into chylomicrons for transport through the lymphatic system after absorption in the small intestine?**

Ans

✓ 1. Microsomal triglyceride transfer protein (MTP)

✗ 2. Pancreatic lipase

✗ 3. Acyl-CoA synthetase

✗ 4. Lipoprotein lipase

Q.20 **Which of the following correctly describes a key metabolic difference between the use of amino acids and fatty acids as energy sources in the human body?**

Ans

✗ 1. Fatty acids are the only macronutrients that can generate glucose via gluconeogenesis.

✗ 2. Fatty acids are stored in muscle tissue and used preferentially during high-intensity exercise.

✓ 3. Amino acids can be converted to glucose, while fatty acids cannot provide net glucose production.

✗ 4. Amino acids can enter glycolysis directly, whereas fatty acids cannot.

Q.21 **Identify the most critical metabolic alteration influencing nutritional demands during the acute phase of major burn injuries.**

Ans

✗ 1. Increased fat oxidation

✗ 2. Decreased protein synthesis

✓ 3. Increased glucose utilization and insulin resistance

✗ 4. Decreased muscle catabolism

Q.22 **A common nutritional complication observed in adolescents due to poor dietary habits is:**

Ans

✗ 1. Excessive protein intake

✓ 2. Iron deficiency anemia

✗ 3. Vitamin D deficiency

✗ 4. Hypercalcemia

Q.23 **Correct differentiation between water-soluble and fat-soluble vitamins in terms of absorption and storage is demonstrated by which of the following statements?**

Ans

✗ 1. Fat-soluble vitamins are excreted in urine and must be replenished daily due to limited body storage.

✗ 2. Fat-soluble vitamins are only absorbed in the colon, while water-soluble vitamins are absorbed in the stomach lining.

✓ 3. Water-soluble vitamins are absorbed directly into the bloodstream and excess is typically excreted in urine, while fat-soluble vitamins are absorbed with dietary fats and stored in body tissues.

✗ 4. Water-soluble vitamins require bile salts for absorption and are stored in large amounts in the liver.

Q.24 **Which description most accurately defines pathophysiology?**

Ans

✗ 1. The study of the cellular mechanisms of normal metabolism without considering disease

✓ 2. The study of disease processes, including how normal physiological processes are altered by disease

✗ 3. The study of how genetic factors affect the function of an individual's organs

✗ 4. The study of pharmacological interventions for disease management

Q.25 **A crucial aspect of Primary Health Care (PHC) focused on enhancing community health is:**

Ans

✗ 1. Prioritization of curative services over preventive care

✗ 2. Exclusive reliance on pharmaceutical interventions

✓ 3. Community participation in health decision-making

✗ 4. Provision of specialized tertiary healthcare services

Q.26 **Which of the following statements distinguishes between endocrine and exocrine glands correctly?**

Ans

✗ 1. Endocrine glands release enzymes directly into ducts, while exocrine glands secrete hormones into the bloodstream.

✓ 2. Endocrine glands secrete hormones into the bloodstream, whereas exocrine glands release their products through ducts to a specific site.

✗ 3. Both endocrine and exocrine glands release their secretions into the bloodstream.

✗ 4. Exocrine glands regulate metabolism by secreting hormones, while endocrine glands aid in digestion by secreting enzymes.

Q.27 **In clinical nutrition, which of the following is considered the most comprehensive assessment to evaluate a patient's nutritional status?**

Ans

✗ 1. Anthropometric measurements

✗ 2. Diet history and food frequency questionnaire

✗ 3. Clinical examination and medical history review

✓ 4. Biochemical analysis of blood and urine

Q.28 **Which of the following is a correct classification of nutraceuticals?**

Ans

✓ 1. Natural, fortified, and recombinant nutraceuticals

✗ 2. Artificial sweeteners and preservatives

✗ 3. Essential oils and herbal perfumes

✗ 4. Antibiotics and chemotherapeutic agents

Q.29 **Which of the following is a primary goal of Medical Nutrition Therapy (MNT) in the management of chronic diseases?**

Ans

✗ 1. To ensure patients follow rigid dietary rules without exception

✗ 2. To limit all sources of dietary fat, regardless of the disease condition

✓ 3. To improve nutritional status and manage disease-related complications

✗ 4. To replace all medications with dietary interventions

Q.30 **A food item commonly included in a soft diet is:**

Ans

✓ 1. Mashed potatoes

✗ 2. Clear broths

✗ 3. Whole grain bread

✗ 4. Fresh fruits and vegetables

Q.31 **Macronutrients primarily responsible for building and repairing tissues, including muscles, enzymes and hormones is/are:**

Ans

✓ 1. Proteins

✗ 2. Fats

✗ 3. Water

✗ 4. Carbohydrates

Q.32 **Which of the following is the most appropriate dietary recommendation for a patient with Type 2 Diabetes Mellitus aiming to improve glycemic control and reduce cardiovascular risk?**

Ans

✗ 1. Emphasize a high-protein, high-fat diet with minimal carbohydrates

✗ 2. Encourage intake of refined carbohydrates for quick energy

✓ 3. Focus on low glycemic index (GI) carbohydrates, soluble fiber, and unsaturated fats

✗ 4. Eliminate all forms of sugar, including fruits and whole grains

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Q.33 **Which of the following pathogens is most commonly associated with raw or undercooked poultry and can cause gastrointestinal illness including diarrhoea, fever and abdominal cramps?**

Ans

✗ 1. Vibrio cholerae

✗ 2. Clostridium botulinum

✗ 3. Escherichia coli O157:H7

✓ 4. Salmonella enterica

Q.34 **A 2-year-old child has been diagnosed with a severe egg allergy. Which of the following is the most appropriate dietary modification to manage this allergy, considering the child's developmental stage and nutritional needs?**

Ans

✓ 1. Recommend a strict egg-free diet, including avoiding hidden sources of eggs in processed foods, while ensuring adequate intake of alternative sources of protein like legumes and meat

✗ 2. Gradually reintroduce eggs into the diet after 6 months to desensitise the immune system and promote tolerance

✗ 3. Recommend the use of egg substitute products that may contain egg-derived ingredients such as egg whites or egg yolks

✗ 4. Replace egg-based foods with soy-based products and ensure the child’s diet includes at least two servings of soy products daily

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Q.35 **What is the primary function of food in the human body?**

Ans

✓ 1. To provide energy, support growth and maintain body functions

✗ 2. To act as a structural support in bones

✗ 3. To regulate atmospheric pressure in the lungs

✗ 4. To manufacture red blood cells

Q.36 **Which of the following pathogens is most commonly associated with contaminated poultry and can cause gastrointestinal distress in humans?**

Ans

✗ 1. Clostridium botulinum

✓ 2. Campylobacter jejuni

✗ 3. Escherichia coli O157:H7

✗ 4. Salmonella enterica

Q.37 **The most effective dietary modification for lowering LDL cholesterol levels in patients with Coronary Heart Disease (CHD) is:**

Ans

✗ 1. Eliminating all dietary fats to reduce total cholesterol

✗ 2. Consuming trans fats to improve lipoprotein(a) levels

✓ 3. Increasing soluble fiber intake from oats, legumes, and fruits

✗ 4. Increasing saturated fat intake to improve HDL cholesterol

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Q.38 **Which of the following accurately describes the role of the malate-aspartate shuttle in cellular respiration?**

Ans

✓ 1. It facilitates the movement of NADH from the cytosol into the mitochondrial matrix for ATP production.

✗ 2. It enables the direct phosphorylation of ADP to ATP during glycolysis

✗ 3. It transfers acetyl-CoA from the cytosol into the mitochondria for the TCA cycle.

✗ 4. It transports $FADH_2$ from the mitochondria into the cytosol for gluconeogenesis.

Q.39 **Effective dietary management of food allergies involves more than allergen elimination and includes:**

Ans

✗ 1. delaying the introduction of all solid foods to prevent food allergies

✓ 2. substituting allergenic foods with nutritionally equivalent and safe alternatives

✗ 3. replacing allergenic foods with nutrient-poor alternatives to prevent reactions

✗ 4. strict avoidance of all processed foods regardless of allergen content

Q.40 **Which of the following defines cellular respiration in the context of human physiology?**

Ans

✗ 1. The mechanical process of moving air into and out of the lungs

✓ 2. The biochemical process by which cells use oxygen to produce energy from food

✗ 3. The transportation of oxygen by haemoglobin to tissues throughout the body

✗ 4. The diffusion of oxygen from the alveoli into the pulmonary capillaries

Q.41 **Carbohydrates are considered the body's preferred energy source because they:**

Ans

✗ 1. are stored in the body as amino acids for later use

✗ 2. require more oxygen to metabolise than fats

✓ 3. are quickly broken down into glucose, providing immediate energy

✗ 4. contain more energy per gram than lipids or proteins

Q.42 **Identify an example of a categorical variable?**

Ans

✓ 1. Blood type

✗ 2. Weight

✗ 3. Age

✗ 4. Height

Q.43 **Which of the following statements correctly distinguishes between a null hypothesis and an alternative hypothesis in the context of research?**

Ans

✗ 1. The null hypothesis and the alternative hypothesis are essentially the same; they both predict that there will be no relationship.

✗ 2. The null hypothesis is used in qualitative research, while the alternative hypothesis is used in quantitative research.

✗ 3. The null hypothesis predicts that there is a positive effect, while the alternative hypothesis predicts that there is no effect.

✓ 4. The null hypothesis predicts that there is no effect or relationship, while the alternative hypothesis predicts that there is an effect or relationship.

Q.44 **Which of the following principles most accurately reflects the organizational structure of Primary Health Care (PHC) as defined by the World Health Organization (WHO)?**

Ans

✗ 1. Emphasis on hospital-based care over community-based care

✗ 2. Prioritization of health services for urban populations over rural populations

✗ 3. Centralized decision-making with minimal community involvement

✓ 4. Integration of curative, preventive, and rehabilitative services at the community level

Q.45 **Which of the following best describes the limitation of using serum albumin as an indicator of nutritional status?**

Ans

✗ 1. It is a specific marker for micronutrient deficiencies.

✗ 2. It reflects short-term changes in dietary protein intake.

✗ 3. It is unaffected by hydration status or inflammation.

✓ 4. It may be influenced by non-nutritional factors such as infection or liver disease.

Q.46 **In patients with prolonged febrile illness, which of the following nutritional alterations is most appropriate to prevent negative nitrogen balance and support immune function?**

Ans

✔ 1. Provide high biological value protein at 1.5–2.0 g/kg/day with adequate energy to prevent protein catabolism

✘ 2. Restrict total energy intake to below basal energy expenditure (BEE) to reduce metabolic burden

✘ 3. Eliminate all dietary carbohydrates to suppress inflammatory cytokine production

✘ 4. Increase dietary fat intake to 50% of total energy while maintaining protein at 0.8 g/kg/day

Q.47 **The process by which a registered dietitian evaluates clinical, biochemical, and dietary data to formulate a nutrition intervention tailored to a disease condition is best defined as:**

Ans

✘ 1. Nutritional epidemiology

✘ 2. Clinical nutrition screening

✔ 3. Medical Nutrition Therapy

✘ 4. Nutritional genomics

Q.48 **The most vital nutrient for supporting growth and development in infants during their first six months of life is:**

Ans

✘ 1. Carbohydrates

✔ 2. Protein

✘ 3. Vitamin D

✘ 4. Iron

Q.49 **Which of the following statistical tests is most appropriate for determining if there is a significant difference between the means of three or more independent groups?**

Ans

✘ 1. Paired t-test

✘ 2. Independent t-test

✔ 3. One-way ANOVA

✘ 4. Chi-square test

Q.50 **Which of the following is an accurate description of the role nutraceuticals play in modulating chronic disease pathways?**

Ans

✔ 1. Nutraceuticals modulate gene expression and enzyme activity, influencing pathways related to inflammation, oxidative stress, and metabolic regulation.

✘ 2. Nutraceuticals are exclusively used for nutrient supplementation in cases of severe deficiency.

✘ 3. Nutraceuticals provide only symptomatic relief and have no influence on cellular signaling pathways.

✘ 4. Nutraceuticals are equivalent to pharmaceuticals and should always replace prescription drugs.

Q.51 **Which of the following best describes the relationship between food and health?**

Ans

✔ 1. Food provides the body with all necessary nutrients, which directly impacts health by preventing diseases.

✘ 2. Food impacts health only if it is consumed in small amounts.

✘ 3. Food only affects health when consumed in excess, leading to obesity.

✘ 4. Food and health are unrelated, as the body can function without food.

Q.52 **Which of the following is a common dietary recommendation for a patient with irritable bowel syndrome (IBS)?**

Ans

✔ 1. Follow a low-FODMAP diet to reduce symptoms

✘ 2. Consume high-FODMAP foods to aid digestion

✘ 3. Increase intake of fried and spicy foods

✘ 4. Avoid all sources of dietary fiber

Q.53 **The pathogen most commonly associated with severe systemic infections and meningitis in immunocompromised individuals, particularly those consuming unpasteurised dairy products, is:**

Ans

✔ 1. Listeria monocytogenes

✘ 2. Escherichia coli O157:H7

✘ 3. Salmonella enterica

✘ 4. Clostridium perfringens

Q.54 **Which food preservation method primarily prevents the growth of microorganisms by lowering the temperature of food?**

Ans

✔ 1. Refrigeration

✘ 2. Salting

✘ 3. Canning

✘ 4. Drying

Q.55 **What is the primary goal of clinical nutrition?**

Ans

✘ 1. To ensure individuals consume the maximum amount of food possible

✘ 2. To focus on developing new foods for commercial markets

✘ 3. To limit the intake of all food groups for weight loss

✔ 4. To provide nutrition education and help individuals achieve optimal health through dietary adjustments

Q.56 **Identify the factor most significantly contributes to the spoilage of dairy products, such as milk and cheese, through the growth of lactic acid bacteria.**

Ans

✘ 1. Oxidation of fats in dairy products

✘ 2. Presence of heavy metals like copper and zinc

✔ 3. High temperatures and lack of refrigeration

✘ 4. Increased moisture content and high pH

Q.57 **Which of the following best differentiates an IgE-mediated food allergy from a non-IgE-mediated food intolerance?**

Ans

✘ 1. Non-IgE-mediated reactions involve rapid onset of symptoms such as anaphylaxis and hives.

✘ 2. IgE-mediated reactions are dose-dependent and occur only after repeated exposure to the allergen.

✘ 3. Both IgE-mediated and non-IgE-mediated reactions can be diagnosed reliably using skin prick testing.

✔ 4. IgE-mediated reactions are immune responses involving mast cell degranulation, while non-IgE-mediated intolerances are typically non-immune and related to enzyme deficiencies or pharmacologic effects.

Q.58 **In managing a patient with chronic kidney disease (CKD) stage 4 and hyperkalemia, which of the following dietary recommendations is most appropriate to address the patient's condition?**

Ans

✔ 1. Decreased intake of potassium-rich foods and restriction of protein intake to reduce kidney workload

✘ 2. Increased intake of potassium-rich foods to improve electrolyte balance

✘ 3. Increased intake of fluids to facilitate potassium excretion

✘ 4. Restriction of sodium and protein, while maintaining potassium intake as usual

Q.59 **In the nutritional management of a patient with tuberculosis (TB), which of the following is the most critical intervention to support both nutritional status and treatment outcomes?**

Ans

✔ 1. Provide high-protein and high-energy foods, with supplementation of micronutrients like vitamin D and zinc to support immune function and tissue repair

✘ 2. Increase caloric intake to meet the high energy demands, but restrict protein intake to avoid kidney strain

✘ 3. Restrict fat intake to prevent excessive weight gain, and encourage vegetarian diets rich in carbohydrates for energy

✘ 4. Avoid all dairy products to prevent potential interactions with anti-tuberculosis medications, and focus on low-calorie foods to reduce inflammation

Q.60 **For patients with cirrhosis of the liver, a dietary modification commonly recommended to prevent malnutrition is:**

Ans

✗ 1. High-protein, low-fat diet to support liver regeneration

✗ 2. Very low-calorie diet to reduce liver stress

✗ 3. Low-protein diet to reduce ammonia buildup

✓ 4. High-carbohydrate, low-fat diet to prevent weight loss

Q.61 **The most evidence-based and sustainable strategy for long-term weight management in adults is**

Ans

✗ 1. Using very low-calorie diets (<800 kcal/day) for extended periods

✗ 2. Following a high-protein, zero-carbohydrate diet

✗ 3. Skipping breakfast daily to reduce total caloric intake

✓ 4. Incorporating portion control, physical activity, and behavior modification

Q.62 **The pathogen responsible for causing hemolytic uremic syndrome (HUS), a severe condition often leading to acute kidney failure following the consumption of contaminated undercooked ground beef, is:**

Ans

✓ 1. Escherichia coli O157:H7

✗ 2. Listeria monocytogenes

✗ 3. Campylobacter jejuni

✗ 4. Salmonella enterica

Q.63 **Which of the following factors is most critical when designing a hospital diet for a patient with multiple comorbidities (e.g., diabetes, hypertension, and renal disease)?**

Ans

✗ 1. The patient's ability to digest and absorb nutrients

✗ 2. The patient's age and gender

✓ 3. The severity and management of each comorbidity in relation to nutrient metabolism

✗ 4. The patient's cultural food preferences

Q.64 **The primary nutritional concern in patients with tuberculosis (TB) is?**

Ans

✗ 1. Excessive fat intake leading to obesity and worsening the disease

✗ 2. Vitamin B12 deficiency due to malabsorption

✓ 3. Malnutrition and weight loss due to increased energy requirements and reduced appetite

✗ 4. Iron deficiency anemia due to excessive bleeding

Q.65 **A significant nutritional concern in elderly individuals that may lead to compromised health is:**

Ans

✗ 1. Increased need for total calories

✗ 2. Excessive fiber intake

✓ 3. Deficiency in Vitamin B12 and folate

✗ 4. Excessive intake of saturated fats

Q.66 **A nutritionist is conducting a comparative analysis of organically grown and conventionally grown spinach to assess differences in micronutrient density and antioxidant capacity. Preliminary results show a statistically significant increase in the concentration of polyphenols and flavonoids in the organic samples. Based on your knowledge of advanced nutrition and food systems, which of the following is the most plausible explanation for this observation?**

Ans

✗ 1. Organic produce is irrigated with mineral-rich water that increases antioxidant content.

✗ 2. Organic crops are genetically modified to enhance polyphenol synthesis.

✗ 3. Organic fertilisers contain higher levels of antioxidants that are absorbed by the plant during growth.

✓ 4. The lack of synthetic pesticide exposure in organic farming stimulates natural defense mechanisms in plants, increasing secondary metabolite production.

Q.67 **Which heart structure prevents the backflow of blood from the right ventricle into the right atrium during ventricular contraction?**

Ans

✗ 1. Bicuspid valve

✗ 2. Pulmonary valve

✗ 3. Aortic valve

✓ 4. Tricuspid valve

Q.68 **The interaction between certain foods can significantly affect nutrient absorption. Which of the following pairs of food components illustrates a well-known nutrient interaction that enhances absorption?**

Ans

✓ 1. Vitamin D and calcium, as vitamin D enhances calcium absorption in the intestines

✗ 2. Iron and calcium, as they both increase the absorption of each other when consumed together

✗ 3. Fibre and zinc, as fibre increases zinc absorption and reduces the risk of deficiency

✗ 4. Omega-3 fatty acids and omega-6 fatty acids, as they both increase each other's absorption

Q.69 **The correct clinical justification for transitioning a patient from a full liquid diet to a soft diet before initiating a normal diet?**

Ans

✗ 1. To provide higher caloric intake in liquid form to reduce digestive workload

✗ 2. To prevent bacterial overgrowth in the intestines due to a sudden fiber increase

✗ 3. To assess the patient's psychological readiness for solid foods after surgery

✓ 4. To gradually reintroduce mechanical and digestive activity in the gastrointestinal tract

Q.70 **Which of the following best defines the term "nutraceutical"?**

Ans

✓ 1. A food or part of a food that provides medical or health benefits, including the prevention or treatment of disease

✗ 2. A naturally occurring compound used exclusively as a dietary supplement for weight loss

✗ 3. A synthetic drug that mimics the nutritional effects of natural food compounds

✗ 4. A conventional food fortified with artificial preservatives to increase shelf life