

Food Nutrition And Dietetics 2024 Solved Paper

Time allowed : 3 hours

Maximum Marks: 60

Section - A

(Objective Type Questions)

1. Answer any 4 out of the given 6 questions on Employability Skills. $4 \times 1 = 4$

(i) A group of sentences form _____

Ans: Paragraph

(ii) Define the term Personality.

Ans: Personality is a cluster of thoughts, feelings and behaviours that make a person unique and different from others.

(iii) Write steps of saving the Spreadsheet.

Ans: Click File, and then, Save. This will open a Save As dialog box. Type the file name and click Save.

(iv) Who are the first-generation entrepreneurs?

Ans: First-generation entrepreneurs are those who do not have any entrepreneurship background.

(v) Give two examples of green jobs in the agriculture sector.

Ans: Organic farmers, environmental lawyers.

(vi) What will you do to insert images in a presentation?

Ans: Click on Insert from the menu → Select Image → Browse through folders → select the image you want to use → click on Open.

2. Answer any 5 out of the given 7 questions. $5 \times 1 = 5$

(i) Suggest a suitable mode of feeding for a patient who is unable to swallow solid food.

Ans: A change in the texture/consistency of food is recommended. A full liquid diet is suitable for who are unable to swallow solid food.

(ii) Assess the nutritional status of an Indian male using BMI, who weighs 75 kg and a height of 180 cm.

Ans: $BMI = \text{Weight} / \text{height}^2$

Weight = 75 kg

Height = 180 cm = 1.8 m

$BMI = 75 / (1.8)^2$

$BMI = 75 / 3.24$

BMI = 23.14

A BMI of 23.14 in an Indian male indicates the person is overweight.

(iii) What is the relation between diarrhoea and dehydration?

Ans: Diarrhoea causes water loss, which could lead to dehydration of the body.

(iv) How much should be the blood pressure of a healthy person?

Ans: 120/80 mmHg

(v) Rahul is suffering from fever. Keeping this in mind, suggest two changes in his diet.

Ans: Initially, a liquid or full fluid diet may be provided for a few days. As the person's appetite improves, a bland, low fibre soft diet may be given, which is soothing and easy to digest.

(vi) List out any two ways to maintain hygiene in kitchen.

Ans:

- Wash hands regularly
- Wear an apron and latex gloves when preparing food
- Wear hats
- Do not wear aprons outside the kitchen. (any two)

(vii) Why are foodborne diseases common during rainy season?

Ans: Rainy season is favourable for growing pathogens with higher humidity and dampness.

3. Answer any 6 out of the given 7 questions. $6 \times 1 = 6$

State whether the following statements are True or False. In case a statement is false, write the correct statement.

(i) Poaching is generally used for fruits and vegetables.

Ans: False. Poaching is generally used for eggs.

(ii) Obesity - a BMI greater than or equal to 25.

Ans: False. Obesity - A BMI greater than or equal to 30

(iii) FSSAI Act was established in the year 2006.

Ans: False. FSSAI was established in 2011

(iv) DOTS is the internationally recommended strategy for AIDS control.

Ans: False. DOTS is the internationally recommended strategy for TB control.

(v) *Salmonella typhi* is the causative agent for typhoid.

Ans: True.

(vi) Gestational diabetes develops during the lactation period.

Ans: False. Gestational diabetes develops during pregnancy.

(vii) HACCP is an ecological approach to pest suppression.

Ans: False IPM is an ecological approach to pest suppression.

4. Answer any 5 out of the given 6 questions. 5x1=5

(i) List two benefits of pressure cooking.

Ans: Advantages

- Reduces cooking time.
- Fuel efficiency increased.
- Nutrient loss is less.
- Food is cooked properly and is made tender.
- The flavour and aroma of the food are trapped inside the cooker and are not lost. (any two)

(ii) What is a bland diet?

Ans: A bland diet is made of soft foods, not very spicy and low in fibre.

(iii) Define the terms:

- (a) Fever
- (b) Dysentery

Ans: (a) Fever is classically defined as the abnormal condition of the body, characterised by an undue rise in temperature, quickening of the pulse, and disturbance of various body functions.

(b) Dysentery is an infection of the intestines resulting in severe diarrhoea with the presence of blood and mucus in the faeces.

(iv) What do you understand by the term 'Potable Water'?

Ans: Water is potable if it is free from pathogenic and harmful bacteria, and contains dissolved salts or minerals.

(v) How much sodium restriction is recommended in hypertension?

Ans: As per the salt restriction prescribed, mild Sodium restriction: 2-3 g or Moderate sodium restriction: 1g or Strict sodium restriction: 0.5 g diet may be planned by judicious selection of foods.

(vi) What is meant by Glycemic Index?

Ans: Glycemic index (GI) describes the rise of blood glucose occurring after a meal.

5. Answer any 5 out of the given 6 questions. 5 x 1=5

The following questions consist of two Statements — Assertion (A) and Reason (R).

Answer these questions selecting appropriate option given below :

- (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).
- (b) Both (A) and (R) are true and (R) is not correct explanation of (A).
- (c) (A) is true, but (R) is false.
- (d) (A) is false, but (R) is true.

- (i) (A): Diet therapy is the use of appropriate food as a tool in the recovery from illness.
(R) In most illness, the patient's diet complements the medical or surgical treatment.

Ans: (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).

- (ii) (A): Eating disorders are common among adolescents.
(R) They are very much conscious about their physical appearance.

Ans: (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).

- (iii) (A) : Obesity and heart disease is a result of excessive energy intake and reduced physical activity.
(R) Sedentary lifestyle and availability of high-energy-density foods lead to chronic diseases.

Ans: (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).

- (iv) (A) Hypertension is a risk factor for Coronary Heart Disease (CHD).
(R) High blood pressure leads to raised cholesterol levels.

Ans: (b) Both (A) and (R) are true, and (R) is not correct explanation of (A).

- (v) (A): Keeping kitchen clean is as important as our body.
(R): It is very important for food handlers to follow the high standard of food hygiene.

Ans: (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).

- (vi) (A): Cholera is referred to an acute infection of the small intestine.
(R): It is caused by *Vibrio cholerae*.

Ans: (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).

6. Answer any 5 out of the given 6 questions. $5 \times 1 = 5$

Multiple Choice Questions (MCQs):

(i) Which test is used to diagnose diabetes?

- (a) ECG
- (c) CT Scan

(b) HbA1c

- (d) Bone Density Test

(ii) FSSAI stands for

- (a) Food Standards and Safety Authority of India
- (b) Food Safety Satisfy All India

(c) Food Safety and Standard Authority of India

(d) Food Storage Standard Authority of India

(iii) Sodium restricted diet is prescribed for which disease?

(a) Diabetes

(b) Tuberculosis

(c) Jaundice

(d) Hypertension

(iv) An oven is required for cooking method.

(a) Baking

(b) Blanching

(c) Poaching

(d) Steaming

(v) The bacteria often present in raw meat, eggs and poultry.

(a) *Staphylococcus*

(c) *Vibrio cholerae*

(b) *Salmonella*

(d) *Clostridium*

(vi) What is the primary reason for blanching food?

(a) Clean the food

(b) Prevent pest infestation

(c) Inactivates enzymes in food and retain the colour.

(d) Prevent food from drying.

Section - B

(Subjective Type Questions)

Answer any 3 out of the given 5 questions on Employability skills. Answer each question in 20 to 30 words.

$3 \times 2 = 6$

7. Write any four barriers to active listening.

Ans: Being preoccupied, noise and visual distractions, past experiences or mindset, and personal factors.

8. Write the techniques that help to maintain positive outlook for life.

Ans: Physical exercise and fresh air, a Healthy diet, organising academic life, adequate sleep and going on holidays with family and friends.

9. Enumerate the advantages of digital presentation.

Ans: It has many advantages, which are as follows.

- They are interesting as they have features like images, videos, animation and music.
- Making changes in digital presentations is easy.
- A digital presentation can be shown to a much larger audience by projecting on a screen.
- The presentation can be printed and distributed to the audience.

10. Enlist any four qualities of a successful entrepreneur.

Ans: Qualities of a successful entrepreneur are,

- (a) Initiative: An entrepreneur must be able to initiate action and take advantage of an opportunity.
- (b) Willingness to take risks: In any business, an entrepreneur always volunteers to take risks to run a business and be successful.
- (c) Ability to learn from experience: An entrepreneur must have the ability to learn from experience.
- (d) Motivation: A motivated entrepreneur will not rest until they complete the task.
- (e) Self-confidence: For achieving success in life, a person needs to have confidence in oneself. Self-confidence is reflected in courage, enthusiasm and the ability to lead.
- (f) Hard work: Hard work is the secret of success for an entrepreneur.
- (g) Decision-making ability: In running an enterprise, an entrepreneur has to make several decisions. Therefore, the person must be capable of making suitable and timely decisions.

11. Discuss the importance of Green Jobs.

Ans: Green jobs that contribute to protecting the environment and reducing carbon footprint are becoming a key economic driver of the twenty-first century. Green jobs help:

- Increase the efficiency of energy and raw materials.
- Reduce greenhouse gas emissions.
- Control waste and pollution.
- Protect and restore ecosystems.
- Support adaptation to the effects of climate change.

Answer any 3 out of the given 5 questions in 20 to 30 words each. $3 \times 2 = 6$

12. Why is the normal diet used as a basis for planning therapeutic diets?

Ans: The normal diet refers to the basic, balanced diet that a person needs for their nutritional requirement. This is what it serves as a basis for planning the therapeutic diets.

13. Write a brief note on Oral Rehydration Therapy.

Ans: Oral rehydration therapy is a simple treatment for dehydration associated with diarrhoea. The term ORT includes:

- Complete oral rehydration salts (ORS) solution
- Solutions made from sugar and salt
- Food-based solutions
- Home fluids without insisting on specified amounts of glucose and salt.

14. What behavioural modifications would you suggest to prevent obesity?

Ans: The behaviour modifications include changes in lifestyle and dietary changes. Successful treatment, management of overweight, obesity requires the adoption and maintenance of lifestyle behaviours contributing to both dietary intake and physical activity.

15. Enlist the risk factors for hypertension (any four).

Ans: Risk factors for hypertension are (any four)

- Cigarette smoking, secondhand smoking
- CAD
- Diabetes mellitus
- Family history
- Dyslipidemia/hypercholesterolemia
- Increased age
- Overweight/obesity
- Low socioeconomic/educational status
- Physical inactivity/low fitness
- Obstructive sleep apnea
- Unhealthy diet
- Psychosocial stress

16. Write on the acute complications of diabetes (any four).

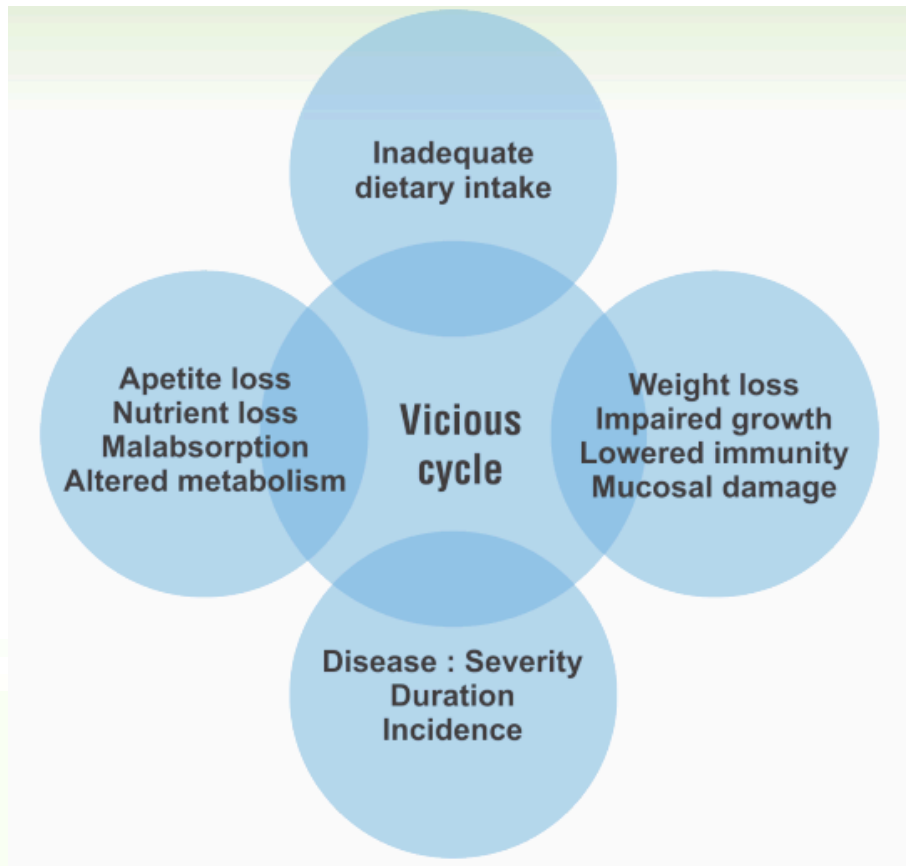
Ans: Diabetic ketoacidosis: Ketoacidosis is a serious complication of diabetes that occurs when the body produces high levels of blood acids called ketones. When there is not enough insulin, the body cannot utilise carbohydrates to provide energy. So, to meet the energy needs, the body begins to break down fat as a fuel. This results in increased formation of ketones. When the ketones produced are more than what the body can handle, they accumulate in the blood, resulting in ketoacidosis.

Answer any 2 out of the given 3 questions in 30 to 50 words each. $2 \times 3 = 6$

17. Explain the relationship between nutrition and infection with the help of a flow chart.

Ans:

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18. Briefly discuss the causes, prevention and dietary management of tuberculosis.

Ans: Tuberculosis is caused by *Mycobacterium tuberculosis*.

- Eat a healthy, nourishing, balanced diet.
- Consume six smaller meals per day instead of three.
- Eat enough energy and protein.
- High-energy and protein drinks may be used effectively to meet the increased requirements.
- At least 500ml to 1 litre of milk.
- Consume at least five to six portions of fruit and vegetables per day.
- Take pure fruit juice to decrease the bulk of the diet.
- Adequate fluid intake (at least 10 to 12 glasses per day).
- Ensure safe food handling and personal hygiene.

19. Govind has had diarrhoea for two weeks and has been advised to have a liquid diet. Suggest any two suitable dishes for him, along with the type of food that should be avoided by the patient suffering from diarrhoea.

Ans: Eat: Kanji (rice soup), which rehydrates the water and is easily digestible.

Clear vegetable soup provides nourishment and electrolytes.

Avoid: Contaminated water and food.

Avoid high fibre or spicy foods that can irritate the intestines and worsen diarrhoea.

Answer any 3 out of the given 5 questions in 50 to 80 words each. $3 \times 4 = 12$

20. Classify different methods of cooking. Explain any 3 methods in detail.

Ans: The different types of cooking are,

- Boiling: Foods are cooked by placing them in boiling water at 100°C and maintaining this temperature till the desired stage of cooking has been reached.
- Toasting: Generally applied to bread slices, which are browned on both sides by keeping them between two grilles.
- Poaching: This method is generally used for eggs. This involves cooking in the minimum amount of liquid at a temperature of 80-85°C. Fish and fruits are also poached.
- Baking: A dry method of cooking, it combines steam, which is generated while food is cooked.
- Blanching: Blanching is a cooking process wherein a food, usually a vegetable or fruit, is scalded in boiling water or oil, removed after a brief, timed interval, and finally plunged into iced water or placed under cold running water (shocking or refreshing) to halt the cooking process.
- Steaming: This method uses steam as the medium of cooking. The food is surrounded by steam and is cooked by the heat supplied from the steam.
- Pressure cooking: In this method, the food is cooked under pressure, and with an increase in pressure, the temperature also correspondingly increases. Thus, the food is cooked very fast.

21. Discuss the physiological mechanisms that regulate blood glucose in the body. How are these disturbed in diabetes?

Ans: In a normal healthy person, the pancreas releases insulin to help the body store and use the sugar from the food they eat. In diabetic individuals, the pancreas (the organ that produces insulin) cannot produce enough insulin, or whatever is produced is not efficiently used by the body, and sugar builds up in the blood (hyperglycemia). It results from a defect in insulin secretion, insulin action or both.

Another concept, important to diabetes status, which needs special mention here, is Glycosylated Haemoglobin (HbA1c). When the concentration of glucose in blood rises, more of it gets attached to haemoglobin (which is a pigment present in red blood cells that carries oxygen to the cells of the body), forming glycosylated haemoglobin (HbA1c). In a normal individual without diabetes, the HbA1c concentration varies from 5-6%, while in diabetics, it increases to over 6% of the total haemoglobin, depending on the blood glucose level. HbA1c shows the general trend of glucose levels in the blood during the previous 2-3 months. HbA1c helps determine how well a person's diabetes is being controlled over time.

22. What are eating disorders? Explain any two types of eating disorders. Also, enumerate the ways to manage these eating disorders.

Ans: Eating disorders are illnesses in which people experience severe disturbances in their eating patterns/behaviours, and related thoughts and emotions.

Anorexia Nervosa :

- An intense fear of weight gain or becoming fat despite the individual's underweight status.
- Profound weight loss

- Dieting and avoiding meals

Bulimia Nervosa :

- Purging (self-induced vomiting) after meals.
- Frequent fluctuations in weight.
- Eating a large amount of food in a short time.

Malnutrition due to low or poor consumption of energy-giving macronutrients, such as carbohydrates, fats, proteins and/or micronutrients relative to individual needs is a concern with both anorexia nervosa and bulimia nervosa. In both cases, consideration needs to be given to symptoms of the starvation syndrome. Starvation syndrome here refers to starvation caused either by food restriction/dieting, as in anorexia nervosa, or problems related to food absorption, as in purging or excessive exercise may mean that insufficient energy is consumed for weight maintenance in bulimia nervosa.

23. Explain the role of dietary factors in the cause of hypertension. What dietary changes are beneficial to control it?

Ans: Unhealthy diets consisting of high fat, salt, sugar (HFSS) include chips, fried foods, sugar-sweetened carbonated and non-carbonated beverages, pizzas, burgers, ready-to-eat noodles, potato fries, and confectionery items.

- Excessive salt intake has been associated with increased prevalence of hypertension and a rise in systolic pressure with age.
- Excessive sodium intake can cause the body to retain fluid and also cause arteries/blood vessels to constrict, which increases blood pressure.
- Also a diet high in calories, saturated fats like ghee, butter and food rich in animal fats (such as whole milk, red meat, organ meats), trans fats (deep fried snacks/foods, bakery products, etc.) and processed, packaged foods such as chips, cookies etc.
- Packaged and processed foods often have sodium added during manufacturing, either as salt or as baking soda.

The main objective of dietary management of hypertension is to:

- Achieve gradual weight loss in overweight and obese individuals and maintain weight slightly below the normal level,
- Reduce sodium intake and maintain fluid and electrolyte balance,
- Maintain adequate nutrition
- Slow down the onset of complications

24. What are food hazards? Explain different types of food hazards with their example.

Ans: A food hazard refers to any agent with the potential to cause adverse health consequences for consumers. It occurs when food is exposed to hazardous agents, which result in contamination of that food. Food hazards may be biological, chemical and physical.

- Biological hazards: They include microorganisms such as bacteria, viruses, yeasts, moulds and parasites. Some of these are pathogens or may produce toxins. A pathogenic microorganism causes

disease and can vary in the degree of severity. Examples of biological hazards include *Salmonella*, *E. coli* and *Clostridium botulinum*.

- Chemical hazards: The chemical hazards vary in the aspect of production they are related to. Some potential chemical hazards could occur before a processor receives product, such as the improper use of pesticides or antimicrobial residues. Others could be chemicals used on processing equipment, such as oils used on equipment or sanitisers.
- Physical hazards: They include objects that are hard or sharp, such as glass, metal, plastic, stones, pits, wood, or even bone. Physical hazards can lead to injuries such as choking, cuts, or broken teeth. Some foreign material in food products may not be a physical hazard but rather an undesirable foreign material, such as hair, insects, or sand, that is not likely to cause injuries.

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