

Sample Question Paper
Krishi: Production, Processing and Marketing (383)

Time: 3 hrs.

Maximum Marks: 80

Note:

- i. This question paper consists of 43 questions in Total.
- ii. All questions are compulsory.
- iii. Marks are given against each question.

Section A consists of

- **Question No. 1 to 16** – Multiple Choice type questions (MCQs) carrying 1 mark each. Select and write the most appropriate option out of the four options given in each of these questions. An internal choice has been provided in some of these questions. You have to attempt only one of the given choices in such questions.
- **Question No. 17 to 28** – Objective type questions carry 02 marks each (with 2 subparts of 1 mark each). Attempt these questions as per the instructions given for each of the questions.

Section B consists of

- **Question No. 29 to 37** – Very Short questions carrying 02 marks each to be answered in the range of 30 to 50 words.
- **Question No. 38 to 41** – Short Answer type questions carrying 03 marks each to be answered in the range of 51 to 80 words.
- **Question No. 42 to 43** – Long Answer type questions carrying 05 marks each to be answered in the range of 81 to 120 words.

Section A: Objective Questions		
Q. No.	Questions	Marks
<i>Q. No. 1 to 16 are the multiple choice questions of 1 mark each</i>		
1.	The colour of black soil is due to a) Presence of iron oxide b) Presence of aluminium oxide c) Presence of humus and clay minerals d) Presence of calcium carbonate	1
2.	The method of applying irrigation water like natural rainfall is termed as a) Flood irrigation b) Sprinkler irrigation c) Furrow irrigation d) Drip irrigation	1
3.	The number of agro-climatic zones present in India is a) 21 b) 60 c) 15 d) 06	1
4.	Which propagation method will you recommend if it is required to produce large number of plants within short period of time? a) Layerings b) Grafting and budding	1

	c) Cuttings d) Micro-propagation	
5.	The life cycle of an insect follows the order of a) Egg → Larva → Pupa → Adult b) Egg → Pupa → Larva → Adult c) Larva → Egg → Pupa → Adult d) Egg → Larva → Adult → Pupa	1
6.	The irrigation method which has highest irrigation efficiency is a) Sprinkler irrigation b) Flood irrigation c) Check-basin irrigation d) Drip irrigation	1
7.	Botanical name of wheat is a) <i>Oryza sativa</i> b) <i>Zea mays</i> c) <i>Triticum aestivum</i> d) <i>Saccharum Spp.</i>	1
8.	The soil air contains higher amount of CO ₂ than atmospheric air because a) Photosynthesis of plant b) Respiration of plant root and soil microorganisms c) Continuous leaf fall on soil d) Gaseous exchange between soil and atmosphere	1
9.	Which of the following is not correct regarding post harvest drying of agricultural produce? a) It decreases the risk of pest infestation b) It extends shelf life of produce c) It increases the cost of transportation d) It maintains the viability of the harvested produce	1
10.	The flour having higher protein content than conventional cereal flour is a) Soy/Composite flour b) Maize flour c) Wheat flour d) Cassava flour	1
11.	An example of modern storage structure is a) Mud bin b) Silos c) Earthen pot d) Gunny bag	1
12.	The term used to describe the amount of heat needed to raise the temperature of one gram of water by one degree Celsius is a) Joule b) Watt c) Calorie d) Kelvin	1
13.	The primary purpose of exposing food products in sealed containers to temperatures above 100 °C during the sterilization process a) To enhance flavor b) To kill harmful microorganisms	1

	c) To improve texture d) To reduce weight											
14.	According to the principle of diminishing marginal utility, as the consumption of a good increases, what happens to the satisfaction derived from each additional unit consumed? a) It remains constant b) It increases c) It decreases d) It becomes negative	1										
15.	Agricultural economics is primarily concerned with which of the following aspects? a) The study of historical agricultural practices b) The development of new agricultural technologies c) The dissemination of agricultural research and innovations to farmers d) The allocation of scarce resources in farm production, processing, and consumption	1										
16.	If a place is to be considered as market, which of the following criteria must be met? a) There must be a commodity or a good for which the transaction will be carried out. b) There must be buyers and sellers. c) These buyers and sellers must interact with each other to arrive at equilibrium prices d) All of the above	1										
Q. No. 17 to 28 are the objective questions of 2 marks each												
17.	Fill in the blanks. a) A piece of land, where crops and livestock production are taken up by a household or a farmer is usually called b) In farming, agricultural inputs such as seed, fertilizer, water, etc. are applied in the needed quantity whenever crops need these inputs to increase yield, quality, and profit.	1×2=2										
18.	Answer the following questions in one or two word. a) Name the edible part of mango. b) Give an example of biotic factors of horticultural production.	1×2=2										
19.	Match the components of soil in column A with their relative proportion in an ideal soil given in column B. <table><tr><th>Column A</th><th>Column B</th></tr><tr><td>(a) Soil water</td><td>(i) 5%</td></tr><tr><td>(b) Soil air</td><td>(ii) ~25%</td></tr><tr><td>(c) Organic matter</td><td>(iii) 45%</td></tr><tr><td>(d) Mineral matter</td><td>(iv) ~25%</td></tr></table>	Column A	Column B	(a) Soil water	(i) 5%	(b) Soil air	(ii) ~25%	(c) Organic matter	(iii) 45%	(d) Mineral matter	(iv) ~25%	0.5×4=2
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20.	Write TRUE (T) for correct statement and FALSE (F) for incorrect statements: a) When two or more crops are grown together on same piece of land following definite planting geometry, it is called crop rotation. b) A plant can't complete its life cycle if deficiency of any essential element occurs in it.	1×2=2										
21.	Complete the following sentences with the given option below.	1×2=2										

	(Options: Vapour, water requirement of crops, thin films, effective irrigation) a) The hygroscopic water is held tightly as on the surface of soil colloidal particles. b) The total quantity of water required to mature an adequately irrigated crop is											
22.	Identify the chemical changes occurred in food during storage. a) Cracking b) Lipid oxidation c) Change in shape and size d) Clump formation e) Browning	1×2=2										
23.	Write TRUE (T) for correct statement and FALSE (F) for incorrect statements: a) Moisture content in grains and the husk is not important during threshing. b) Threshing involves processes like rubbing, beating, striking, or stripping to detach the grain from the earheads or straw.	1×2=2										
24.	Answer the following questions in one or two word. a) What is the primary ingredient used to sweeten jam? b) At what temperature does liquid nitrogen freeze food in cryogenic freezing?	1×2=2										
25.	Write TRUE (T) for correct statement and FALSE (F) for incorrect statements: a) Meat, egg, liver and kidney are the good source of vitamin B ₁₂ . b) Scurvy disease is caused due to the deficiency of vitamin A in human body.	1×2=2										
26.	Match the land area in column A with their size given in column B. <table><tr><th>Column A</th><th>Column B</th></tr><tr><td>(a) Large holding</td><td>(i) Less than 1 hectare</td></tr><tr><td>(b) Small land</td><td>(ii) 4-10 hectare</td></tr><tr><td>(c) Medium land</td><td>(iii) 1-2 hectare</td></tr><tr><td>(d) Marginal land</td><td>(iv) More than 10 hectare</td></tr></table>	Column A	Column B	(a) Large holding	(i) Less than 1 hectare	(b) Small land	(ii) 4-10 hectare	(c) Medium land	(iii) 1-2 hectare	(d) Marginal land	(iv) More than 10 hectare	1×2=2
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27.	Mention the type of utilities created in given scenario. a) A farmer produced 3 ton of wheat from his land and kept part of it in storage for consumption in next season. b) The other part of wheat grain is milled into flour which is then used to make bread, biscuits and cakes.	1×2=2										
28.	Read the given passage carefully and answer the following questions in one or two words. Ravi, a young agri-entrepreneur from small village, recognized the challenges farmers faced due to excessive chemical use. After studying agricultural science, he returned to his village and introduced organic farming methods, emphasizing crop rotation and organic fertilizers. Despite strong resistance from local farmers, he kept on practicing the technique. Ravi's farm became a model for sustainable agriculture, and within four years, he expanded his business, selling organic produce directly to urban markets, earning profits and respect from his community. a) Why did Ravi choose to adopt organic farming in his village?	1×2=2										

	b) Which type of entrepreneurial characteristics would you find in Ravi when he continued practicing the organic farming even after strong resistance from other farmers?	
Section B: Subjective Questions		
29.	Explain any two challenges faced by Indian agriculture.	2
30.	Define the following terms. (attempt any two) i. Genetically modified crops ii. Micro irrigation iii. Agriculture 4.0 iv. Aeroponics	2
31.	Describe the advantages of sexual propagation. OR What are the causes of fruit drop and barrenness in plants?	2
32.	i) Why is maintaining an adequate amount of pore space in the soil essential for crop yield? ii) Why is neutral pH considered ideal for crop cultivation?	2
33.	Classify the food according to their function. Give one example of each category of food. OR Classify the food based on their shelf life. Give one example of each category of food.	2
34.	Explain the following terms in your own words. (attempt any two) i. Bio-fortification ii. Value addition iii. Blanching iv. Freezing	2
35.	Differentiate between fixed cost and variable cost. OR Identify the factors affecting the change in demand of a product.	2
36.	A farmer has produced 800 kg of maize from his 0.5 hectare of land. During the cultivation, he spent Rs. 20,000 from his pocket to buy agricultural inputs like seed, fertilizers, pesticide etc. He sold the produce in nearest agricultural market at a price of Rs. 3500 per quintal. Calculate the average cost of cultivation of farmer and his gross returns.	2
37.	What are the secondary functions of a market? OR Name any four Public sector marketing institutions involved in agricultural marketing.	2
38.	Draw a diagram to illustrate the classification of farming systems practiced in India. OR Identify the major states/areas where following types of soils are found. i. Alluvial soil ii. Laterite and lateritic soil iii. Desert soil	3
39.	Describe briefly about kinds of soil water held in pore spaces.	3
40.	What is warehouse? Discuss the importance of warehouse system. OR How the drying process is monitored during post harvest management of grains?	3

41.	How do entrepreneurs contribute to society? Provide examples to illustrate each contribution.	3
42.	Explain the criteria of harvesting for the given crops. i. Rice ii. Wheat iii. Chickpea iv. Sugarcane v. Groundnut	5
43.	Following is the list of important vitamins required for our nourishment. Explain their function in human body and name the diseases caused due to its deficiency. i. Vitamin A ii. Vitamin C iii. Vitamin B₁ iv. Vitamin B₃ v. Vitamin B₁₂ OR Write a short note on the following food preservation techniques. i. Chemical preservation ii. Fermentation iii. Salting iv. Hurdle technology v. MAP	5

Marking Scheme
Krishi: Production, Processing and Marketing (383)

Section A: Objective Questions		
Q. No.	Answers	Marks
<i>Q. No. 1 to 16 are the multiple choice questions of 1 mark each</i>		
1.	c) Presence of humus and clay minerals	1
2.	b) Sprinkler irrigation	1
3.	c) 15	1
4.	d) Micropropagation	1
5.	a) Egg → Larva → Pupa → Adult	1
6.	d) Drip irrigation	1
7.	c) <i>Triticum aestivum</i>	1
8.	b) Respiration of plant root and soil microorganisms	
9.	c) It increases the cost of transportation	1
10.	a) Soy/Composite flour	1
11.	b) Silos	1
12.	c) Calorie	1
13.	b) To kill harmful microorganisms	1
14.	c) It decreases	1
15.	d) The allocation of scarce resources in farm production, processing, and consumption	1
16.	d) All of the above	1
<i>Q. No. 17 to 28 are the objective questions of 2 marks each</i>		
17.	a) Farm b) Precision	1×2=2
18.	a) Mesocarp b) Crop variety, weeds, insect-pest, pathogen, nematode (Any one)	1×2=2
19.	(a) – (ii), (b) – (iv), (c) – (i), (d) – (iii) OR (a) – (iv), (b) – (ii), (c) – (i), (d) – (iii) Both will be correct.	1×2=2
20.	a) False b) True	1×2=2
21.	a) Thin films b) Water requirement of crops	1×2=2
22.	b) Lipid oxidation e) Browning	1×2=2
23.	a) False b) True	1×2=2
24.	a) Sugar b) -196°C	1×2=2
25.	a) True b) False	1×2=2
26.	(a) – (iv), (b) – (iii), (c) – (ii), (d) – (i)	1×2=2

27.	a) Time utility (Explanation: Here farmer stores the wheat to meet the future demand of food for his family) b) Form utility (Explanation: Here the value of wheat grain is increased through processing e.g. milling and such value added products fetch higher price than conventional wheat grain)	1×2=2
28.	a) The farmers in his village were struggling with low yields due to excessive chemical use. b) Self-confidence, persistence, risk-taking, faith in planning, long-term commitment (any one characteristics)	1×2=2
Section B: Subjective Questions		
29.	Any two of the following points will be considered. 1) Lack of crop diversification: The agriculture sector is susceptible to price swings and market uncertainty due to its reliance on a small number of primary crops. 2) Outdated agricultural practices: Traditional agricultural methods are still used by a large number of Indian farmers, which results in low yields and inefficient farms. 3) Small and fragmented landholdings: As a result of population increase and the dissolution of the joint family structure, agricultural land has been continuously divided into fewer and smaller parcels. Such tiny landholdings restrict farmer's capacity to use modern farming methods and technology. 4) Dependency on rainfall: India's agriculture is mostly dependent on the monsoon. Distribution of rainfall is not the same throughout the country. Thus food grain output varies from place to place. 5) Lack of access to credit and market: It is often difficult for small and marginal farmers to get insurance and loans. 6) Degradation of soil health: Excessive use of chemical fertilizers and pesticides, coupled with poor soil management practices, contribute to soil health deterioration, affecting long-term agricultural sustainability	2
30.	i. Genetically modified crops are the special type of plants used in agriculture, whose genetical make up has been modified using genetic engineering techniques with the aim of introducing new character or improving nutritional value. Example: Bt Cotton ii. Micro irrigation is a modern method of irrigation in which water is applied on the land's surface or below the surface using drippers, sprinklers, foggers, and other emitters. Example: Sprinkler irrigation and drip irrigation iii. Agriculture 4.0 or Digital agriculture is the next generation of farming methods in which emerging digital tools are used for maximizing crop yields and other agricultural outcomes. Technologies like automatic machines, sensor-equipped robots, drone or satellites are used. iv. Aeroponics is an indoor farming technique where roots of the crops are suspended in the air. Water and nutrients are sprayed	2

	intermittently in the form of mist with help of emitters.	
31.	Advantages of sexual propagation - Seedlings are easy to raise through this method and comparatively cheap - Sexually propagated plants generally live longer than vegetatively propagated plants OR Causes of fruit drop and barrenness Nutritional causes: Lack of essential plant nutrients especially nitrogen and boron cause premature fruit drop. Environmental causes: Some fruit crops fail to produce sufficient yield in a region due to adverse environmental conditions like unfavourable temperature, rainfall and humidity. Pathological causes: Infestation of crops with disease and pest causes fruit barrenness and reduces consumer demand in market. Cultural causes: Most frequent cause of fruit drop in garden is excessive irrigation. Judicious amount of irrigation and proper drainage are advisable in this case. Mechanical causes: Occurrence of cyclone, hail or wind storm during flowering and fruit bearing season causes excessive fruit drops. Lack of pollinators: Pollination is the process of transferring pollen from the male part of a flower to the female part. Pollinators such as bees, butterfly, wasp, bat, beetles are the agents of pollination. Excessive use of pesticides kills such beneficial insects and causes inadequate fruit setting for production. (Any two points of the above may be considered)	2
32.	i) Pore spaces in soil are filled with water and air which help the plant in nutrient uptake and root respiration. Therefore plant nutrition and root growth will be inhibited if sufficient amount of pore space is not present in soil. ii) As most of the essential nutrients are present in plant available form for uptake at pH 7, hence neutral pH is ideal for crop cultivation.	2
33.	Classification of food according to their function: - Energy-giving foods: e.g. cereals, roots and tubers, dried fruits - Body-building foods: e.g. Milk, egg, meat, fish, pulses, oil seeds and nuts - Protective foods: e.g. green leafy vegetables and fruits OR Classification of food according to their function: - Perishable foods: e.g. milk, meat, fish, poultry - Semi-perishable foods: e.g. wheat flour, semolina, citrus fruits, aonla,	2

	apples, roots and tubers, potatoes, onions, garlic iii) Non-perishable foods: e.g. cereals, pulses and nuts, oil seeds, fats and oils, honey, sugar, jaggery, salt (Any one example of each food group should be mentioned)									
34.	i. Bio-fortification is the method of improving nutritional quality of food through genetic modification and conventional breeding. Example: "Golden Rice" contains higher the levels of iron than normal rice. ii. Value addition is the process of taking and transforming a raw commodity into a high-quality end product. Value addition results in providing highly nutritious products with excellent quality, shelf life, and food safety. iii. Blanching is a pretreatment given to foods using mild heat (88-99°C) for a specific time followed by rapid cooling or passing immediately to the next processing stage. Its primary purpose is to destroy enzyme activity in fruit and vegetables. iv. Freezing is a food processing technique that increases the shelf life of the food products and inhibits the growth of most of the bacteria. It is done by two methods: mechanical and cryogenic or flash freezing (using liquid nitrogen at -196 °C).	2								
35.	Difference between fixed cost and variable cost: <table><tr><th>Fixed cost</th><th>Variable cost</th></tr><tr><td>These are costs that do not change with the level of production.</td><td>These costs vary with the level of output.</td></tr><tr><td>Fixed costs are incurred at once in the production system.</td><td>Variable costs are incurred several times in the production system.</td></tr><tr><td>Example: Cost of land, cost of machinery and building</td><td>Example: Cost of seed, manure, pesticides, irrigation and labour</td></tr></table> OR Factors affecting the change in demand: 1) Changes in income of consumer 2) Changes in prices of substitute goods or complements 3) Changes in expectations of consumers 4) Changes in the number or composition of consumers 5) Changes in tastes of consumers	Fixed cost	Variable cost	These are costs that do not change with the level of production.	These costs vary with the level of output.	Fixed costs are incurred at once in the production system.	Variable costs are incurred several times in the production system.	Example: Cost of land, cost of machinery and building	Example: Cost of seed, manure, pesticides, irrigation and labour	2
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Example: Cost of land, cost of machinery and building	Example: Cost of seed, manure, pesticides, irrigation and labour									
36.	Average cost of cultivation = Total cost/Quantity produced. In given problem, total cost of cultivation = Rs. 20000/- and quantity produced = 800 kg. So average cost will be (20000/800) = Rs. 25 per kg of maize grain produced. Gross return/total returns = Output sold in the market x Sales price Here output sold = 800 kg and sale price = Rs. 3500 per quintal = Rs. 35 per kg. So, gross returns will be (800*35) = Rs. 28,000/-	2								
37.	The secondary functions of a market (any four)	0.5*4=								

	- Grading - Standardization and quality control - Packing or packaging - Storage and warehousing - Risk management - Price determination or discovery - Dissemination of market information - Transportation - Buying and selling - Financing OR Public sector marketing institutions (Mention any four) - Directorate of Marketing and Inspection (DMI), Faridabad - Commission for Agricultural Costs and Prices (CACP) - Food Corporation of India (FCI) - Tea Board - National Horticulture Board (NHB) - National Dairy Development Board (NDDB) - Agricultural and Processed Food Products Export Development Authority (APEDA) - Marine Products Export Development Authority (MPEDA) - e- National Agriculture Market (e-NAM) - Central silk board	2
38.	<pre> graph TD FS[Farming system] --> TS[Traditional system] FS --> SSCS[Semi-commercial system] FS --> CS[Commercial system] TS --> TS1[Shifting cultivation/Jhum cultivation/Nomadic farming] TS --> TS2[Subsistence farming] SSCS --> ICS[Intensive cropping system] SSCS --> DFLS[Dryland farming system] SSCS --> ASL[Agroforestry system] ICS --> ICS1[Cereal crop based system] ICS --> ICS2[Pulses-based system] ICS --> ICS3[Vegetables-based system] ASL --> ASL1[Agri-silviculture system] ASL --> ASL2[Silvipastoral system] ASL --> ASL3[Agrisilvi-pastoral system] CS --> PPF[Perennial/plantations farming] CS --> LDF[Livestock, dairying, fisheries, poultry, honeybee] </pre> OR Alluvial soil: Indo-Gangetic plains (IGP), Brahmaputra valley and coastal area	3

	Laterite and lateritic soil: Parts of Tamil Nadu, Karnataka, Goa, Maharashtra, Madhya Pradesh, eastern and north-eastern regions of Bihar, Jharkhand, West Bengal, Assam and Uttar Pradesh Desert soil: Parts of Rajasthan, Gujarat, Haryana and Punjab	
39.	Kinds of soil water: Gravitational water: The water held between 0.0 to 0.33 bars of soil moisture tension is called gravitational water. It moves rapidly down towards the water table under the influence of gravity and present in the soil for only a short period of time. This is of little use to plants. Capillary water: The capillary water is held in the micro pores around the soil between 0.33 bars to 31 bars of soil moisture tension. This water moves from the zone of higher potential to the zone of lower potential. Hygroscopic water: The water held tightly in thin films on the surface of soil colloidal particles at 31 bars tension and above is termed hygroscopic water. Plants cannot absorb such water because it is held very tenaciously by the soil particles.	3
40.	The warehouse building is a single-story structure primarily used for bulk storage. Importance: (any two) Improved safety: Modern warehouse storage is safe and well-engineered. In fact, these buildings are sturdy and long-lasting enough to hold at once. Enhanced organization: The warehouse layout takes into account the planning of storage conditions. It allows alteration in structures to meet storage requirements. Maximum space: Utilizing all resources and space for effective storage of products. OR Post harvest drying is monitored through • Touching and tasting the grains • Rubbing /walking on threshed grains • Pressing grains with thumbs • Observing physical appearance • Gravimetric analysis • Using moisture meter (any three)	1+2=3
41.	Contribution of entrepreneurs in society: Job Creation: Entrepreneurs establish new businesses and expand existing businesses, leading to increased employment opportunities for others. Example: Mr. Narayana Murthy co-founded Infosys which provides employment opportunities to lakhs of Indian youths. Innovation and Progress: Entrepreneurs are driven by a desire to solve problems and create value. They develop new products,	3

	services, and technologies that address societal needs and improve people's lives. Example: Mr. Azim Premji, founder of Wipro, is one of the most notable philanthropists in India. His foundation works to improve primary education in rural India and also supports healthcare and humanitarian efforts. c. Economic Development: A thriving entrepreneurial ecosystem contributes to overall economic development. It attracts investment, fosters competition, and drives productivity. Successful entrepreneurs pay taxes, contribute to the local economy, and can even inspire others to start their own businesses. Example: Mr. Ratan Tata, an industrialist and former chairman of the Tata Group, has inspired countless entrepreneurs through his investments in startups, mentorship, and ethical business practices.																			
42.	Criteria of harvesting of crops: 1. Rice: 80–85% of the grains are straw colored (yellow coloured) 2. Wheat: Yellowing of spikelets and straw becomes dry 3. Chickpea: Leaves dry up and shedding starts, plants turn reddish brown 4. Sugarcane: Drying of lower leaves, brix between 18 to 20%, sucrose about 15% 5. Groundnut: Yellowing of leaves, dark coloured patches inside the shell, kernels turn red or pink	5																		
43.	<table border="1"> <thead> <tr> <th>Vitamin</th><th>Functions (Any one)</th><th>Disease</th></tr> </thead> <tbody> <tr> <td>Vitamin A</td><td> • Vision • Immune system • Healthy skin • Bone and tooth growth </td><td>Night Blindness</td></tr> <tr> <td>Vitamin C</td><td> • Maintain healthy bones, skin, and teeth • Healing of wounds and fractures </td><td>Scurvy</td></tr> <tr> <td>Vitamin B₁</td><td> Needed for • Energy metabolism • Nerve function </td><td>Beriberi</td></tr> <tr> <td>Vitamin B₃</td><td> Needed for • Energy metabolism • Proper digestion, • Healthy nervous system </td><td>Pellagra</td></tr> <tr> <td>Vitamin B₁₂</td><td>Essential for the metabolism of carbohydrates.</td><td>Loss of memory</td></tr> </tbody> </table>	Vitamin	Functions (Any one)	Disease	Vitamin A	• Vision • Immune system • Healthy skin • Bone and tooth growth	Night Blindness	Vitamin C	• Maintain healthy bones, skin, and teeth • Healing of wounds and fractures	Scurvy	Vitamin B ₁	Needed for • Energy metabolism • Nerve function	Beriberi	Vitamin B ₃	Needed for • Energy metabolism • Proper digestion, • Healthy nervous system	Pellagra	Vitamin B ₁₂	Essential for the metabolism of carbohydrates.	Loss of memory	5
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	OR	
	I. Chemical preservation: Chemical preservation involves the use of chemical compounds to preserve food. Chemicals act as an anti-oxidant or interfere enzyme activity in food and activity of the cell membrane and genetic material of microorganisms. Example: Benzoic acid and its sodium salt, sorbic acid, potassium meta-bisulphite, calcium propionates II. Fermentation: Fermentation is the value addition process for food products where the action of microorganisms on food is controlled in suitable environment. This process generates organic acids, alcohol, and carbon dioxide. Such products have a preservative effect by limiting the growth of spoilage. Example of fermented food: cheese, yoghurt, sauerkraut, pickles, idli, dosa, wine, bread III. Salting: Salting is one of the oldest and most effective methods of food preservation. When salt or a salt solution (brine) is applied to food products, it reduces the moisture content and activity of water (aw) to microorganisms, ultimately inhibiting their growth. This is due to the process of osmosis. Salting is commonly used for preservation of pickles, meat, fish, raw mango, aonla etc. IV. Hurdle technology: This is the technique where two or more preservation technologies are combined in a single process to destroy microorganisms. Hurdle technology has been successfully applied for dairy products, meat products, fruits and vegetables, ready-to-eat meals. Examples of hurdles in a food system include low temperature during storage, high temperature during processing, and the presence of preservatives. V. MAP: Modified atmosphere packaging (MAP) is the method of modifying the composition of the internal atmosphere of a food package in order to improve the shelf life. The gases used in MAP are oxygen (O₂), nitrogen (N₂) and carbon dioxide (CO₂). It has wide applications in preservation of foods like meat products, bread, fresh pasta, fish, fruits and vegetables, readymade salads etc.	