



National Officers
ACADEMY
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Test Series Batch-2
CSS-2026 (September 2025)
GK-I (General Science & Ability) Test-1

INSTRUCTIONS

SOLVE any TWO of the following questions
ALLOCATE 40 minutes to each question
ANSWER all parts of the question
ASSIGN proportionate weightage to each part
Each question carries TWENTY marks

Test 1

Question 1

- (a) What is a galaxy, and what are its main components? Discuss the different types of galaxies and their characteristics. How does our solar system fit into the Milky Way galaxy?
- (b) What are proteins, and why are they essential for the human body? Discuss the different types of proteins (complete and incomplete) and provide examples of protein-rich foods. How do proteins contribute to overall health and development?
- (c) Describe the internal structure of the Earth, including the crust, mantle, outer core, and inner core. Discuss the characteristics of each layer and their roles in geological processes. How does the Earth's internal structure impact plate tectonics and earthquakes?
- (d) What are the different methods of food preservation, and how do they work? Discuss the importance of food preservation in maintaining food safety and quality. Provide examples of traditional and modern food preservation methods, such as refrigeration, freezing, canning, and dehydration.

Question 2

- (a) What is food contamination, and how can it occur at different stages of the food supply chain? Discuss the different types of food contaminants

(biological, chemical, and physical) and provide examples of each. How can food contamination be prevented and controlled?

(b) What are the main causes and consequences of flooding in Pakistan? Discuss the impact of flooding on communities, infrastructure, and the economy. How can flood risk be mitigated and managed in Pakistan?

(c) What is disaster management, and why is it essential for communities and governments? Discuss the different stages of disaster management, including preparedness, response, recovery, and mitigation. How can disaster management strategies be improved to reduce the impact of disasters?

(d) What are the benefits and drawbacks of plastics in everyday life? Discuss the environmental impacts of plastic pollution, including marine pollution and waste management challenges. How can plastic use be reduced and managed more sustainably?

Question 3

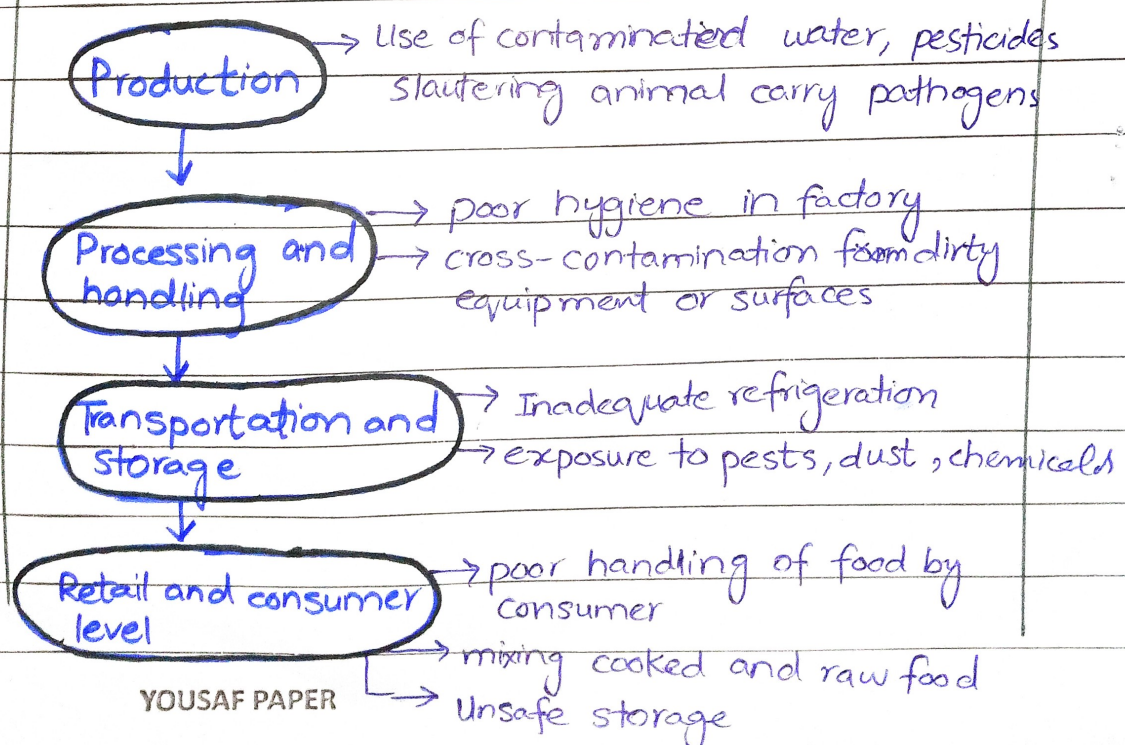
Question 2

(a)

Contamination of food

Food contamination is the presence of any harmful substance in the food that can compromise its safety and quality, making it harmful, unfit or dangerous for consumption.

Food contamination at different levels of food supply chain



Types of food contaminants

Physical contaminants



- Wood
- glass
- Metals
- Stones
- Hairs
- Nails

Chemical contaminants



- pesticides
- Insecticide
- cleaning agents
- additives

Biological contaminants



- Fungus
- Bacteria
- Molds
- Yeast
- Pathogens
- Parasites

Prevention and control of food contamination

- Using clean water for crops and animals
- Avoid excessive use of fertilizers
- Proper vaccination and veterinary checks to ensure healthy livestock
- Using protective clothing (masks, gloves)
- Strict hygiene maintenance of equipment, workers and facilities
- Proper refrigeration / freezing
- Clean, sealed, pest-free containers
- Washed hand and utensils, edible items
- Cook food to safe internal temperature

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- : 6/1
- Regular checks or inspection of farms, factories and markets
 - Public awareness campaigns on safe food practices
 - Enforcing food safety standards

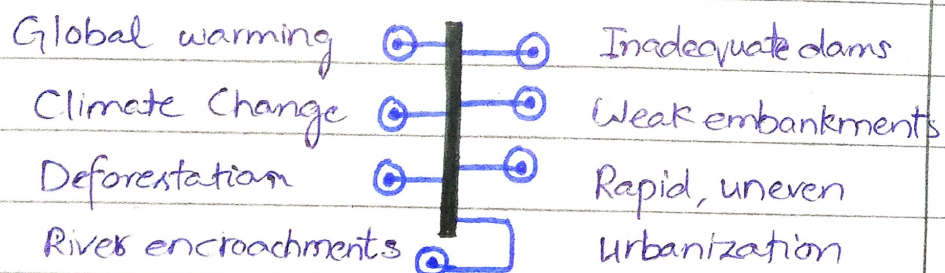
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(b)

Floods

“Flood is a high-water surge in which water overflows its natural or artificial banks onto normally dry land, such as river inundating the flood plains.”

Causes of floods



Consequence of floods in Pakistan

Deaths: 2022 floods caused around **1100** deaths

Migration: 2022 floods affected **33 million** individuals, causing mass migration of **7.9M** people

Livestock mortality: **794000** deaths in 2022 floods.

Infrastructural damage: **1.9 million** houses damaged

Agricultural damage: **2.8 million** hectares of land in Sindh damaged

Social chaos and disharmony

Mitigation and management of floods in Pakistan

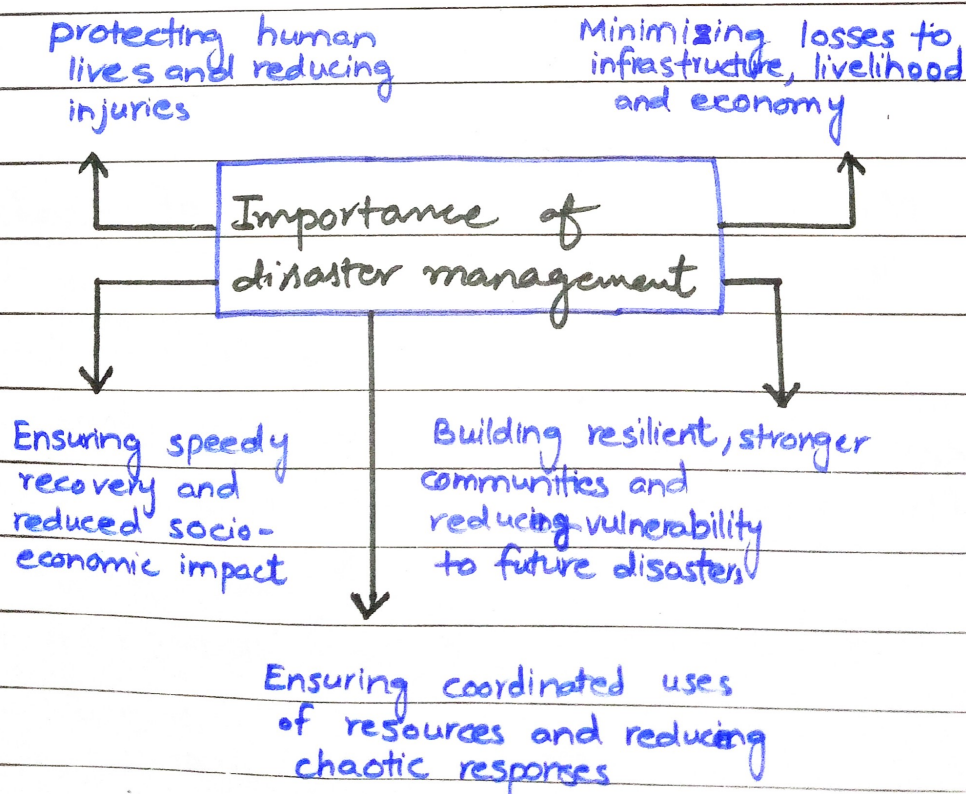
Mitigation and Flood management

- Early warning systems
- Dam building
- Afforestation
- Drainage system improvement
- Stronger river embankments
- Careful and planned urbanization
- Stricter encroachment laws

(C) Disaster management

"The rearrangement and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery, to lessen the impact of disasters."

Importance of disaster management for government and communities.



Different stages of disaster management

1- Mitigation

→ Pre-disaster mitigation efforts, reducing or eliminating the disaster occurrence or reducing the effects of unavoidable disasters.

- Building codes
- Land management
- Preventive health care
- Public awareness education

2- Preparedness

→ Plans to save lives and minimize disaster damage and enhance disaster response systems.

- Mutual aid agreements
- Warning systems
- emergency contact lists
- Evacuation plans
- Resource inventories

3- Response

→ Providing immediate assistance to maintain life, improve health and support morale of the affected population.

- Food supplies
- Garments,
- tents provision
- Medicines availability
- Shifting to safer places

4- Recovery

→ Returning all the systems back to normal or better conditions.

- Rebuilding of houses
- Reconstruction of lost, damaged infrastructure
- Psychological help
- Monetary assistance
- Aids/grants

Improving disaster management strategies

Increasing coordination between institutes of disaster management, environmental management and development planning

Improving early warning systems

Capacity building of disaster management personnels and local communities

Increasing focus and efforts towards mitigation and preparedness rather than solely relying on response

Investing on research and development to find viable options

Improving the say of disaster management authorities in administrative hierarchy

Reforestation and better urban and land management planning

Creating contingency funds and cash transfer systems

Maintaining updated hazard maps, vulnerability databases and loss damage records to guide investment and response

(d)

Benefits of plastics

- Plastics are lightweight and strong reducing transport costs and fuel use
- Durable and corrosion resistance
- Less expensive and versatile allowing mass production of goods.

- provide insulation and energy efficiency
- Provide safety, protect product from contaminants and other harmful elements
- Reusable for multiple times

Drawbacks of plastics

- Production and burning of plastic release greenhouse gases, contribution to global warming and climate change
- Non-biodegradable, taking centuries to decompose
- Littered plastics harm landscapes, waterways and cities
- Harmful to wildlife: entanglement, ingestion, suffocation
- Microplastics enter food chains, impacting health

Environmental impacts of plastics

- Habitat destruction
- Greenhouse gas emissions
- Soil and freshwater contamination
- Human health risks
- Food-chain contamination; ingestion by fish or plankton
- Marine pollution: garbage accumulation

Plastic waste management challenges

- 1- Lack of infrastructure : weak sorting and recycling systems
- 2- Virgin plastic often cheaper than recycled material, discouraging recycling
- 3- Open dumping and burning causing pollution and health hazards
- 4- Lack of proper plastic waste management policy
- 5- Compound plastics hard to recycle

Measures for sustainable plastic waste use management

