

AGRICULTURE & FORESTRY

Part-I: Agriculture (50 marks)

I. Concept of Integrated Agriculture:

- Components of natural resources as bases for agriculture production (Land, Water, Biological, Environmental, Solar, Energy)

II. Challenges in Pakistan's Agriculture:

- Present scenario and future prospects
- Analytical overview of:
 - a) Issues and strategies for improvement of crop management
 - b) Livestock Management
 - c) Fisheries
 - d) Cottage Industry
 - e) Resource Management
 - f) Rural Development
- Institutions and policies: Issues and options

III. Elements of Climate and their Relationship with Crop Growth:

- Farming Systems
- Biological Nitrogen Fixation
- Soil Profile, structure and texture & soil fertility
- Soil Erosion and Conservation
- Water-logging and Salinity

IV. Genetic Improvement for Crop Production:

- GMO crops
- Seed Production Technology

V. Horticulture:

- Floriculture
- Landscaping
- Pests and diseases of agriculture crops and their control
- Integrated Pest Management

VI. Rainfed and Irrigated Agriculture:

- Agriculture Mechanization
- Land tenure and land-reforms
- Role of Agriculture in the National Economy

Part-II: Forestry (50 Marks)

- Forest, rangelands and wildlife importance and significance
- Forest management and utilization
- Wood-based industries in Pakistan
- Silviculture
- Range management and utilization
- National and international forest wealth statistics
- Role of wildlife as value addition to forestry
- Forest-based wildlife resources of Pakistan and their management
- Eco-tourism
- Forestry, agroforestry, social forestry and forest biometrics
- Socioeconomic and ecological impact of man-made forests
- Watershed Management
- Role of forests in prevailing climate change dilemma
- National forest laws and policies
- Biodiversity & environment