

**PUNJAB PUBLIC SERVICE COMMISSION**  
**COMBINED COMPETITIVE EXAMINATION FOR**  
**RECRUITMENT TO THE POSTS OF**  
**PROVINCIAL MANAGEMENT SERVICE -2019**

**SUBJECT: AGRICULTURE (PAPER-II)**

**TIME ALLOWED: THREE HOURS**

**MAXIMUM MARKS: 100**

**NOTE: Attempt FIVE Questions in All. Attempt in Urdu or English.**

- Q. No. 1:** What are the molecular bases of genetic code? Discuss in detail the mechanism of gene expression in plant cells? **(10+10=20 Marks)**
- Q. No. 2:** Write a detailed note on potential of oil-seed crops cultivation in Pakistan and their role for the improvement of national economy? **(20 Marks)**
- Q. No. 3:** Describe in details about different factors affecting the plant disease epidemiology? Discuss various methods of control and manage the plant diseases? **(10+10=20 Marks)**
- Q. No. 4:** Discuss different ways of virus transmission in plants? What are different strategies that may be used to prevent/control the viral diseases in plants? **(10+10=20 Marks)**
- Q. No. 5:** Discuss in details the role of agri-biotechnology for the improvement of crops? What may be the impact of genetically modified crops on natural biodiversity? **(10+10=20 Marks)**
- Q. No. 6:** Define Mutation; explain how mutation plays a role in plant breeding along with any example of success. **(5 + 15=20 Marks)**
- Q. No. 7:** Name important sucking and chewing types of insect pests of cotton. Explain life cycle, mode of action and suitable control measures of any one of these insects. **(10 + 10=20 Marks)**
- Q. No. 8: Write short note on the following: (4x5=20 Marks)**
- i. Tissue culture technology
  - ii. Sericulture industry
  - iii. In-built genetic resistance of plants
  - iv. Plant parasitic nematodes