



**FEDERAL PUBLIC SERVICE COMMISSION**  
**COMPETITIVE EXAMINATION-2020**  
**FOR RECRUITMENT TO POSTS IN BS-17**  
**UNDER THE FEDERAL GOVERNMENT**

Roll Number

**BOTANY**

<b>TIME ALLOWED: THREE HOURS</b> <b>PART-I(MCQS): MAXIMUM 30 MINUTES</b>	<b>PART-I (MCQS)</b> <b>PART-II</b>	<b>MAXIMUM MARKS = 20</b> <b>MAXIMUM MARKS = 80</b>
<b>NOTE: (i)</b> Part-II is to be attempted on the separate <b>Answer Book</b> . <b>(ii)</b> Attempt <b>ONLY FOUR</b> questions from <b>PART-II</b> . <b>ALL</b> questions carry <b>EQUAL</b> marks. <b>(iii)</b> All the parts (if any) of each Question must be attempted at one place instead of at different places. <b>(iv)</b> Write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper. <b>(v)</b> No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed. <b>(vi)</b> Extra attempt of any question or any part of the question will not be considered.		

**PART-II**

- Q. No. 2.** Discuss the life cycle of late blight of potato. Discuss its epidemics, disease forecast and control. **(20)**
- Q. No. 3.** Write a note on sporophyte of *Pinus*. Compare reproductive characteristics of *Pinus* with *Selaginella*. **(20)**
- Q. No. 4.** Write down the discovery, chemical structure, and role of gibberellins in regulating various physiological processes in plants. **(20)**
- Q. No. 5.** Describe nitrogen cycles between the abiotic environment and organisms. Briefly describe how human activities have changed global nitrogen budget. **(20)**
- Q. No. 6.** How Morgan and his students demonstrated that gene was linked in fruit flies? How linkage is related to some events in meiosis? **(20)**
- Q. No. 7.** Differentiate between plasmid and vector. Briefly explain bacteriophage lambda ( $\lambda$ ) vector. Describe its working and selection process. **(20)**
- Q. No. 8.** Write down a comprehensive notes on any **TWO** of the followings: **(10 each)** **(20)**
- (a)** The four components of taxonomy.
  - (b)** Distribution of gymnosperms in Pakistan.
  - (c)** Differences in vascular system of stem of monocot and dicot plants.

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