



**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2017
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT**

Roll Number

BOTANY

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

PART-II

- Q. No. 2.** Describe briefly habitat, structure, reproduction and life cycle of adiantum. **(20)**
- Q. No. 3.** Discuss evolution of seed and its importance in vascular plants. **(20)**
- Q. No. 4.** Why is Darwin's theory of evolution still so controversial? Explain. **(20)**
- Q. No. 5.** How does the C₄ pathway differ from C₃ pathway of carbon fixation? What are the advantages and disadvantage of each pathway? **(20)**
- Q. No. 6.** How did the discovery that the DNA molecule is helical with uniform 2-nm diameter lead Watson and crick to propose the pairing rules for double-helix model? Explain. **(20)**
- Q. No. 7.** Describe causes and reclamation of soil salinity and water logging in Pakistan. **(20)**
- Q. No. 8.** Write short notes on any FOUR of the following: **(5 each) (20)**
- (a) Forensic Palynology.
 - (b) Chemo taxonomy.
 - (c) Imperfect Fungi.
 - (d) Chromosomal aberrations.
 - (e) Economic importance of Acacia Family.



**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2018
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Roll Number

BOTANY

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

PART-II

- Q. No. 2.** Discuss biological and economic importance of Fungi. **(20)**
- Q. No. 3.** Describe main features of Gymnosperms and explain life cycle of Pinus. **(20)**
- Q. No. 4.** What are main types of Pollution? What may be the measures for its control? **(20)**
- Q. No. 5.** Explain CAM Photosynthesis contrasting it to C₄ Photosynthesis in terms of partitioning of a pathway. **(20)**
- Q. No. 6.** What are the evidences in support of Evolution? What contributions modern genetics has made for its support? **(20)**
- Q. No. 7.** What is the evidence for semiconservative replication of DNA? **(20)**
- Q. No. 8.** Write short notes on the following: **(5 marks each) (20)**
- (a)** Ultrastructure of cell membrane
 - (b)** Speciation
 - (c)** Vernalization
 - (d)** Classes of Algae



FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2019
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Roll Number

BOTANY

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

PART – II

- Q. No. 2.** Discuss evolution of vascular bundles in tracheophytes. (20)
- Q. No. 3.** Describe process of fertilization for an angiospermic plant with significance of double fertilization. (20)
- Q. No. 4.** Write a comprehensive account of Plant Growth Hormones. (20)
- Q. No. 5.** Give an account of structure of epidermis and describe various functions of its different cell types. (20)
- Q. No. 6.** Write a comprehensive account of light and dark reactions in plants. (20)
- Q. No. 7.** Describe various structural modification of roots, stems and leaves tissues in xerophytic plants. (20)
- Q. No. 8.** Write short notes on any FOUR of the followings:- (5 each) (20)
- (a) Theory of Natural Selection
 - (b) Economic importance of Rust and Smut
 - (c) Causes and significance of Polyploidy
 - (d) Types of stele
 - (e) Evolution of sporophyte in Bryophytes



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

Roll Number

BOTANY

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II . ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) 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 (λ) 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.



FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2022
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Roll Number

BOTANY

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

PART-II

- Q. No. 2.** Explain different types of algae based on cell structure, nature of the pigments and the types of reserve food materials. **(20)**
- Q. No. 3.** Discuss the economic importance and distribution of gymnosperms in Pakistan. **(20)**
- Q. No. 4.** Describe the pollination mechanisms in angiosperms. **(20)**
- Q. No. 5.** Shed light on the important rules of botanical nomenclature. **(20)**
- Q. No. 6.** Explain the role of different plant hormones from seed germination to fruit ripening. **(20)**
- Q. No. 7.** What are the adverse effects and control measures of aquatic and terrestrial pollution? Explain. **(20)**
- Q. No. 8.** Write notes on any **TWO** of the followings: **(10 each) (20)**
- (a)** Causes and mechanism of cell senescence
 - (b)** Importance of genetic engineering
 - (c)** Divergent Evolution



FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2023
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TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.		
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(iv) Write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the question will not be considered.		

PART-II

- Q. No. 2.** Write comprehensive notes on the following: **(10 each) (20)**
- (a)** Morphology of thallus in Algae
- (b)** Alternation of generation in Bryophytes
- Q. No. 3.** Describe significance of various types of abiotic environmental factors for soil formation. Give soil characteristics formed by each agent. **(20)**
- Q. No. 4.** Describe ultra-structure of nucleus with particular reference to nuclear membrane and pore complexes. **(20)**
- Q. No. 5.** Describe various types of environmental pollutions. Give significance of biodiversity and conservation to save the living planet. **(20)**
- Q. No. 6.** Give a diagrammatic account of location of the different photosystems in granum and briefly describe their functions in photosynthesis. **(20)**
- Q. No. 7.** What are different rules of botanical nomenclature? Compare natural and artificial system of classification. **(20)**
- Q. No. 8.** Write short notes on any **TWO** of the followings: **(10 each) (20)**
- (a)** Reproduction and economic importance of yeast
- (b)** Illustrative account of protein synthesis in eukaryotes
- (c)** Endosperm development in Angiosperms
