

# FEDERAL PUBLIC SERVICE COMMISSION



## COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN BS-17 UNDER THE FEDERAL GOVERNMENT, 2011

Roll Number

### BOTANY, PAPER-I

<b>TIME ALLOWED:</b>	<b>(PART-I MCQs) 30 MINUTES</b>	<b>MAXIMUM MARKS: 20</b>
<b>THREE HOURS</b>	<b>(PART-II) 2 HOURS &amp; 30 MINUTES</b>	<b>MAXIMUM MARKS: 80</b>
<b>NOTE: (i) First attempt PART-I (MCQs) on separate Answer Sheet which shall be taken back after 30 minutes.</b>		
<b>(ii) Overwriting/cutting of the options/answers will not be given credit.</b>		

### (PART-I MCQs) (COMPULSORY)

- Q.1.** Select the best option/answer and fill in the **appropriate box** on the **Answer Sheet**. **(1 x 20=20)**
- (i) Tiny plants with silicon cells are:  
(a) Diatoms (b) Zooplanktons (c) Fungi (d) None of these
- (ii) Withania somnifera belongs to the family:  
(a) Solanaceae (b) Brassicaceae (c) Poaceae (d) None of these
- (iii) The 1<sup>st</sup> root of the seed plant develops from the radical is called:  
(a) Tap root (b) Aerial root (c) Adventitious root (d) None of these
- (iv) Mycorrhiza is the symbiotic association between:  
(a) Algae and Fungi (b) Angiosperms and Fungi  
(c) Lichens and Fungi (d) None of these
- (v) New Ulva plant after undergoing meiosis produces \_\_\_\_\_ Zoospores:  
(a) Monoflagellated (b) Biflagellated (c) 4-flagellated (d) None of these
- (vi) Alternation of generation in Moss is:  
(a) Isomorphic (b) Heteromorphic (c) Absent (d) None of these
- (vii) Most primitive family is:  
(a) Magnoliaceae (b) Poaceae (c) Malvaceae (d) None of these
- (viii) Laminaria is the example of:  
(a) Red Algae (b) Brown Algae (c) Green Algae (d) None of these
- (ix) The chief component of the cell wall of fungi is the:  
(a) Pectin (b) Chitin (c) Lignin (d) None of these
- (x) Formation of fruit without fertilization:  
(a) Apomixis (b) Polyembryony (c) Parthenocarpy (d) None of these
- (xi) National flower of Pakistan is:  
(a) Jasminum (b) Cestrum nocturnum (c) Pisum sativum (d) None of these
- (xii) Zygomycetes have their common name as:  
(a) Imperfect Fungi (b) Conjugating Fungi (c) Sac Fungi (d) None of these
- (xiii) Filaments of Algae are composed either of distinct cells:  
(a) Gametocytes (b) Coenocytes (c) Heterocysts (d) None of these
- (xiv) The bryophytes are also called:  
(a) Sporogonium (b) Amphibians (c) Arthropytes (d) None of these

## **BOTANY, PAPER-I**

- (xv) The first plant which developed true leaves and roots are:  
(a) Pteropsids (b) Lycopsids (c) Psilopsids (d) None of these
- (xvi) An ovule is:  
(a) Fertilized seed (b) Integumented Indehiscent megasporangium  
(c) Dehiscent megasporangium (d) None of these
- (xvii) An angiosperms the female gametophytes contain:  
(a) 1 – several cells (b) 7 cells only (c) 3 cells (d) None of these
- (xviii) Sporophyte of Bryophytes is also called as:  
(a) Sporangium (b) Sporogonium (c) Prothallus (d) None of these
- (xix) One of the examples of crustose lichen is:  
(a) Basidia (b) Dermatocarpus (c) All of these (d) None of these
- (xx) The scientific name of Brinjal is:  
(a) Solanum tuberosum (b) Solanum melongena  
(c) Nicotiana tabaccum (d) None of these

## **PART-II**

<b>NOTE:</b> (i) <b>PART-II</b> is to be attempted on separate Answer Book. (ii) <b>Attempt ONLY FOUR questions from PART-II. All questions carry EQUAL marks.</b> (iii) <b>Extra attempt of any question or any part of the attempted question will not be considered.</b>
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- Q.2.** Briefly describe the life cycle of Bryophytes. (20)
- Q.3.** Write detailed notes on the different stages of mitosis. Draw diagrams. (20)
- Q.4.** Write down the salient features of family Rosaceae and its economic importance. (20)
- Q.5.** Give detailed note on the life cycle of Angiosperm up to the development of seed. (20)
- Q.6.** Define tissue. What are meristematic tissues and also classify them on different basis? (20)
- Q.7.** What are lichens? How lichens are beneficial for the universe? (20)
- Q.8.** Write the characteristic features of Gymnosperms. How they differ from Angiosperms and Pteridophytes. (20)

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## COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN BS-17 UNDER THE FEDERAL GOVERNMENT, 2011

Roll Number

### BOTANY, PAPER-II

<b>TIME ALLOWED:</b>	<b>(PART-I MCQs)</b>	<b>30 MINUTES</b>	<b>MAXIMUM MARKS: 20</b>
<b>THREE HOURS</b>	<b>(PART-II)</b>	<b>2 HOURS &amp; 30 MINUTES</b>	<b>MAXIMUM MARKS: 80</b>
<b>NOTE: (i) First attempt PART-I (MCQs) on separate Answer Sheet which shall be taken back after 30 minutes.</b>			
<b>(ii) Overwriting/cutting of the options/answers will not be given credit.</b>			

### (PART-I MCQs) (COMPULSORY)

**Q.1. Select the best option/answer and fill in the appropriate box on the Answer Sheet. (1 x 20=20)**

- (i) Reduction takes place in ----- stage of meiosis.  
(a) Metaphase I (b) Anaphase I (c) Telophase I (d) None of these
- (ii) Group of young cells which are capable of active cell division is called:  
(a) Meristem (b) Parenchyma (c) Periderm (d) None of these
- (iii) Genetic basis of ABO blood group system was explained by;  
(a) Landsteiner (b) Levine (c) Bernstein (d) None of these
- (iv) Allele for whiteness in Drosophila is:  
(a) Recessive (b) Dominant (c) Codominant (d) None of these
- (v) Major unit of Ecology is:  
(a) Ecosystem (b) Biosphere (c) Community (d) None of these
- (vi) Primary succession that starts on dry soil/rock is called:  
(a) Derosere (b) Xerosere (c) Lithosere (d) None of these
- (vii) The way Glucose is metabolized/oxidized depends on the availability of:  
(a) CO<sub>2</sub> (b) O<sub>2</sub> (c) Energy (d) None of these
- (viii) The absorbing peak of Chlorophyll is:  
(a) 680 (b) 670 (c) All of these (d) None of these
- (ix) Light can work in photosynthesis only when it is:  
(a) Absorbed (b) Transmitted (c) Reflected (d) None of these
- (x) Cellular respiration consists of:  
(a) Glycolysis (b) Krebs's cycle and respiratory chain (c) All of these (d) None of these
- (xi) The chemical wastes from Industry are called as:  
(a) Effluents (b) Garbage (c) Sewage (d) None of these
- (xii) All chromosomes other than sex chromosomes are called as:  
(a) Autosomes (b) Dictyosomes (c) Autophagosomes (d) None of these
- (xiii) Actual place/location where organism lives is called as:  
(a) Habitat (b) Domain (c) Niche (d) None of these
- (xiv) In roots and stems having secondary growth, the epidermis is replaced by a protective layer called:  
(a) Phellogen (b) Periderm (c) Cuticle (d) None of these

## **BOTANY, PAPER-II**

- (xv) The stomata with 2 large and one small subsidiary cells surrounding stoma is called as:  
(a) Diacytic (b) Anisocytic (c) Cyclocytic (d) None of these
- (xvi) Vacuoles are filled with watery fluid called as:  
(a) Cell sap (a) Enzymes (a) Plastids (a) None of these
- (xvii) The chromosomes arrange themselves on the equator of spindle fibres during:  
(a) Metaphase (b) Anaphase (c) Telophase (d) None of these
- (xviii) The event that gives rise to the heritable alteration in the genotype is termed as:  
(a) Translocation (b) Abnormality (c) Mutation (d) None of these
- (xix) The sequence of genes along the DNA strand is called as:  
(a) Genetic code (b) Chromosomal aberration (c) DNA sequence (d) None of these
- (xx) Chemicals used to destroy animal pests are:  
(a) Herbicides (b) Pesticides (c) Insecticides (d) None of these

### **PART-II**

**NOTE:**(i) **PART-II** is to be attempted on separate Answer Book.  
(ii) **Attempt ONLY FOUR questions from PART-II. All questions carry EQUAL marks.**  
(iii) **Extra attempt of any question or any part of the attempted question will not be considered.**

- Q.2.** What is dormancy? Enlist different methods to break dormancy? (20)
- Q.3.** Write down short notes on: (7+7+6=20)  
(a) Food chain (b) Vernalization (c) Adaptive mutations
- Q.4.** Give the Biosynthesis and mode of action of Abscissic acid. (20)
- Q.5.** Define linkage. Explain the phenomenon of coupling and repulsion with reference to linkage.  
Give example. (20)
- Q.6.** What do you mean by evolution? How would you explain Lamarkism? (20)
- Q.7.** Define Mitosis and enlist its different stages? (20)
- Q.8.** Write short notes on **ANY TWO** of the following: (10+10)  
(a) What is water logging? Give its causes and reclamation?  
(b) What is transpiration and also give its various types.  
(c) Elaborate the mechanism of stomatal movement?

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