

FEDERAL PUBLIC SERVICE COMMISSION



COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN BS-17 UNDER THE FEDERAL GOVERNMENT, 2013

BOTANY, PAPER-II

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

PART-I ((MCQs) (COMPULSORY)

Q.1. (i) Select the best option/answer and fill in the appropriate Circle ● on the OMR Answer Sheet. (20x1=20)
(ii) Answers given anywhere, other than OMR Answer Sheet, shall not be considered.

- Plants expressing foreign genes introduced by genetic engineering are:
(a) Transgens (b) Hybrids (c) Mutants (d) Polyploids (e) None of these
- An association of species in which both partners benefits is called:
(a) Antagonism (b) Competition (c) Mutualism (d) None of these
- Autotrophs are primary producers in:
(a) Food web (b) Food chain (c) Food series (d) Food security (e) None of these
- A multiprotein complex that comprises ATPase in thylakoid membrane is:
(a) CF₀-CF₁ (b) CF₀-CF₂ (c) CF₁-CF₂ (d) CF₂-CF₁ (e) None of these
- Set of conditions in which an organism completes its life cycle is:
(a) Niche (b) Habitat (c) Biome (d) Habit (e) None of these
- Suberized band in the cell wall of endodermis is:
(a) Exodermal strip (b) Casparian strip (c) Abscission strip
(d) Hypodermal strip (e) None of these
- Genetically dwarfness can be overcome by treatment with:
(a) Jasmonates (b) Auxins (c) Abscisic acid (d) Gibberellins (e) None of these
- Exchange of genetic material between two paired chromosome during meiosis is:
(a) Test cross (b) Back cross (c) Inbreeding (d) None of these
- Free space in tissues comprising cell wall and intercellular spaces:
(a) Symplast (b) Apoplast (c) Protoplast (d) Amyloplast (e) None of these
- Chromosome complement with 2n-1 is called:
(a) Disomy (b) Nullisomy (c) Monosomy (d) Tetrasomy (e) None of these
- Plants shedding their leaves seasonally are called:
(a) Annuals (b) Biannuals (c) Perennials (d) Deciduous (e) None of these
- Organisms that obtain energy by metabolizing the inorganic sources are:
(a) Lithotrophs (b) Osmotrophs (c) Heteroautotrophs (d) Phototrophs (e) None of these
- The culminating stage of plant succession in a given ecosystem is:
(a) Cline (b) Climate (c) Climax (d) Cleave (e) None of these
- Climatically and geographically similar conditions on the earth are called:
(a) Biotope (b) Biomes (c) Biosphere (d) Biography (e) None of these

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15. Vernalization is process in which flowering is promoted by:
(a) Salt treatment (b) Hot treatment (c) Cold treatment (d) None of these
16. Which of the following contains its own DNA?
(a) Golgi bodies (b) Mitochondria (c) Ribosomes (d) None of these
17. In chlorophyll, four rings of pyrrole forming a complex with:
(a) Cu-atom (b) Fe-atom (c) Mg-atom (d) K-atom (e) None of these
18. Plants growing inside another plant are called:
(a) Endophytes (b) Exophytes (c) Amphiphytes (d) Phleophytes (e) None of these
19. A functional unit of modern ecology is:
(a) Habitat (b) Biosphere (c) Succession (d) None of these
20. Mutation arising as an immediate and direct response to selective pressure:
(a) Point mutation (b) Adaptive mutation (c) Shift mutation
(d) Natural selection (e) None of these

PART-II

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Candidate must write **Q. No.** in the **Answer Book** in accordance with **Q. No.** in the **Q. Paper**.
(iii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iv) Extra attempt of any question or any part of the attempted question will not be considered.

- Q. No.2.** What are various criteria of essentiality of mineral elements of plants? Support you answer with examples. (20)
- Q. No.3.** What is seed dormancy and give its types? How the dormancy is important to plant life; give merits and demerits of seed dormancy. (20)
- Q. No.4.** What is an Ecosystem? What are the components of an aquatic ecosystem and how it is important to life on earth? (20)
- Q. No.5.** "Pollution is hampering our daily life activities." Justify this statement citing appropriate examples. (20)
- Q. No.6.** Differentiate between mitosis and meiosis. Also show how meiosis is significant in continuity to next generation? (20)
- Q. No.7.** Define mutations and mutagens. Give details of various means for the production of mutants in genetic studies. (20)
- Q. No.8.** Give a detailed descriptive and illustrative account of fine structure of gene. (20)
