

BOTANY, PAPER-I

**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR
RECRUITMENT TO POSTS IN BPS-17 UNDER
THE FEDERAL GOVERNMENT, 2010**

Roll Number

BOTANY, PAPER-I

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| TIME ALLOWED: | (PART-I) 30 MINUTES | MAXIMUM MARKS:20 |
| | (PART-II) 2 HOURS & 30 MINUTES | MAXIMUM MARKS:80 |

- NOTE: (i) First attempt PART-I (MCQ) on separate Answer Sheet which shall be taken back after 30 minutes.**
(ii) Overwriting/cutting of the options/answers will not be given credit.

**PART – I (MCQ)
(COMPULSORY)**

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

- (i) The Green Algae belongs to:
 (a) Cyanochloranta (b) Chlorophycophyta (c) Charophyta
 (d) Cryptophycophyta (e) None of these
- (ii) If the gametes and gametangia in Fungi are of unequal size, they are termed as:
 (a) Heterothallic (b) Homothallic (c) Isogametes
 (d) Anisogametes (e) None of these
- (iii) Chlorophyll 'd' exists in:
 (a) Pyrrophyta (b) Phaeophyta (c) Cryptophyta
 (d) Rhodophyta (e) None of these
- (iv) Which of the type of chlorophyll is rare in Xanthophyceae and has been determined in only two of its genera:
 (a) chlorophyll 'a' (b) chlorophyll 'e' (c) chlorophyll 'b'
 (d) chlorophyll 'd' (e) None of these
- (v) The Axoneme in an algal filament is composed of _____ fibrils:
 (a) five (b) seven (c) eleven
 (d) one (e) None of these
- (vi) An antibiotic called "Chlorellin" is derived from:
 (a) Chara (b) Spirogyra (c) Volvox
 (d) Chlorella (e) None of these
- (vii) In Pakistan, Volvox is found abundantly in water ponds during the months of:
 (a) March and April (b) May and June (c) November and December
 (d) January and February (e) None of these
- (viii) Because of extracting _____ from water and depositing it in their walls different species of Chara are referred to as "Stone Worts":
 (a) Sodium chloride (b) Calcium carbonate (c) Potassium sulphate
 (d) Potassium nitrate (e) None of these
- (ix) Puccinia graminis causes _____ in wheat:
 (a) Yellow or stripe rust (b) Brown or orange leaf rust (c) Black or stem rust
 (d) Loose green smut (e) None of these
- (x) The zero and one stages of Puccinia graminis are produced on:
 (a) Triticum aestivum (b) Hordeum Vulgare (c) Sorghum Vulgare
 (d) Barberis Vulgaris (e) None of these
- (xi) A stable self-supporting association of a _____ is termed as lichen:
 (a) bryophyte & a pteridophyte (b) mycobiont & a phycobiont (c) plant & animal
 (d) gymnosperm & angiosperm (e) None of these
- (xii) Equisetum is the only living genus that belongs to:
 (a) Sphenopsida (b) Caphalida (c) Chlorophycophyta
 (d) Pteropsida (e) None of these
- (xiii) The genus Equisetum comprises about 25 species distributed world-over except in:
 (a) Eurasia (b) North America (c) South America
 (d) Australasia (e) None of these
- (xiv) The members of class Filicinae in pteridophyta date back to _____ era:
 (a) Mesozoic (b) Paleozoic (c) Cenozoic
 (d) Cambrian (e) None of these

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- (xv) Marsilea quadrifolia belongs to the group of plants known as:
 - (a) Lichens
 - (b) Sedges
 - (c) Ferns
 - (d) Shrubs
 - (e) None of these
- (xvi) _____ show marked affinities with both Pteridophytes and angiosperms:
 - (a) Bryophytes
 - (b) Hydrophytes
 - (c) Gymnosperms
 - (d) Epiphytes
 - (e) None of these
- (xvii) _____ has five leaves in the spur:
 - (a) Pinus longifolia
 - (b) Pinus excelsa
 - (c) Pinus roxberghii
 - (d) Pinus wallichiana
 - (e) None of these
- (xviii) The resting period between pollination and fertilization in Taxus baccata may be:
 - (a) Five to ten months
 - (b) Two to three months
 - (c) One to two months
 - (d) Ten to eleven months
- (xix) In Ephedra, the oospore undergoes repeated divisions to produce eight-celled:
 - (a) Zygote
 - (b) Zygosphere
 - (c) Endosperm
 - (d) Pro-embryo
 - (e) None of these
- (xx) Double fertilization is a characteristic of:
 - (a) Gymnosperms
 - (b) Bryophytes
 - (c) Angiosperms
 - (d) Pteridophytes
 - (e) None of these

PART – II

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| NOTE: | <ul style="list-style-type: none"> (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) Extra attempt of any question or any part of the attempted question will not be considered. |
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- Q.2.** (a) Classify different groups of algae based on their habitat and pigmentation. **(10)**
 (b) Write a note on the Economic Importance of Chlorophyta. **(10)**
- Q.3.** Fungi have great impact on our national economy. Explain their constructive and destructive roles with a special emphasis on agriculture sector. **(20)**
- Q.4.** What are lichens? Explain how lichens are not only beneficial for humans but also for the entire universe? **(20)**
- Q.5.** (a) Explain the general characteristics of Bryophytes. **(10)**
 (b) Write a detailed note on mode of reproduction in Marchantia. **(10)**
- Q.6.** (a) Discuss the structure of strobilus and sporangia of Equisetum. **(10)**
 (b) Explain the major resemblances and differences between Gymnosperms and Pteridophytes. **(10)**
- Q.7.** Explain the mechanism of pollination, fertilization and development of seed as well as seed dispersal in Angiosperms. **(20)**
- Q.8.** Write short notes on **ANY TWO** of the following: **(2 x 10)**
 - (i) Rules of botanical nomenclature
 - (ii) Chemo – taxonomy and Numerical taxonomy
 - (iii) Concept of Speciation
