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|--|---|
| (d) Orthotropous Ovule | 4 |
| (e) Polygonum embryo sac | 4 |
| (f) Double fertilization and triple fusion | 4 |

AP-449

B.Sc. Part-II (Semester-III) Examination
3S :BOTANY
(Angiosperm Systematics, Anatomy and Embryology)

Time : Three Hours]

[Maximum Marks : 80

N.B. :— (1) There are **SEVEN** questions in all.

(2) Question No. 1 is compulsory and carries 8 marks.

(3) Question Nos. 2 to 7 carry equal marks.

(4) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :

(i) Pappus is modified _____. $\frac{1}{2}$

(ii) The water conducting tissue is _____. $\frac{1}{2}$

(iii) The flower with superior ovary is called _____. $\frac{1}{2}$

(iv) Wedged shaped phloem is found in _____ stem. $\frac{1}{2}$

(B) Choose correct alternative (MCQ) :

(v) Which of the following is a Natural System of classification ?

- (a) Engler and Prantl
- (b) Bentham and Hooker
- (c) Hutchinson
- (d) Linnaeus 1/2

(vi) Embryo Sac is also known as :

- (a) Microgametophyte
- (b) Female gametophyte
- (c) Microsporangium
- (d) Megasporangium 1/2

(vii) The sieve elements are major components of _____

- (a) xylem
- (b) phloem
- (c) collenchyma
- (d) parenchyma 1/2

5. Discuss :

- (o) Primary structure of Monocot Root 4
- (p) Xylem 4
- (q) Parenchyma 4

OR

- (r) Characteristics of growth rings 4
- (s) Sclerenchyma 4
- (t) Primary structure of Dicot Root 4

6. Discuss Secondary Structure in Bignonia Stem and comment on it's anomalies. 12

OR

Explain the following :

- (u) Internal structure of Nerium Leaf 6
- (v) Normal Secondary Growth in Dicot Stem. 6

7. Comment on :

- (a) Anatropous Ovule 4
- (b) Helobial Endosperm 4
- (c) T.S. Anther 4

OR

(viii) The pollinia is character of family :

- (a) Brassicaceae
- (b) Apiaceae
- (c) Solanaceae
- (d) Asclepiadaceae ½

(C) Answer in **one** sentence :

- (ix) Define tissues. 1
- (x) What is the function of Tapetum ? 1
- (xi) What is meant by Double Fertilization ? 1
- (xii) What is Binomial Nomenclature ? 1

2. Comment on the following :

- (a) Bennittalean Theory 4
- (b) Taxonomic Rank 4
- (c) Concept and Importance of Biodiversity 4

OR

- (d) Principles of Botanical Nomenclature 4
 - (e) Ex-situ conservation 4
 - (f) Royal Botanical Garden, Kolkata. 4
3. Describe the Bentham and Hooker's system of classification of flowering plants with merits and demerits. 12

OR

- (g) Describe diagnostic characters of Malvaceae 6
 - (h) Describe economic importance of Leguminosae 6
4. Comment on the following :
- (i) Economic importance of Asteraceae 4
 - (j) Systematic position of Asclepiadaceae 4
 - (k) Reproductive structure of Poaceae 4

OR

- (l) Cyathium 4
- (m) Economic importance of Liliaceae 4
- (n) Diagnostic features of Liliaceae 4