

B.Sc. (Part-II) Semester-III Examination

BOTANY

(Angiosperm Systematics, Anatomy and Embryology)

Time : Three Hours]

[Maximum Marks : 80

Note : (1) There are **SEVEN** questions in all.

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

(3) Question No. 2 to 7 carry equal marks.

(4) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :

(i) The _____ venation is found in Dicot leaves. ½

(ii) Bentham and Hooker's system is type of _____ system of classification. ½

(iii) Wedge shaped phloem is found in the _____ stem. ½

(iv) Umbel inflorescence is diagnostic feature of family _____. ½

(B) Choose the correct alternatives (MCQ) :

(v) Many pulses of daily use belong to family _____.

(a) Verbenaceae

(b) Fabaceae

(c) Lamiaceae

(d) Solanaceae ½

(vi) Royal Botanical Garden in India located at :

(a) Kolkata

(b) Banglore

(c) Pune

(d) Delhi ½

(vii) Which is the nutritive layer of anther ?

(a) Epidermis

(b) Tapetum

(c) Endothecium

(d) None of these ½

(viii) Medullary vascular bundles are present in the stem of :

(a) *Nerium*

(b) *Bignonia*

(c) *Maize*

(d) *Boerhaavia* ½

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

(ix) Mention the special type of inflorescence in Euphorbia. 1

(x) What is herbarium ? 1

(xi) What are the components of Phloem ? 1

(xii) What is chalazogamy ? 1

2. Explain :

(a) Importance of biodiversity 4

(b) Principles of nomenclature 4

(c) Royal Botanical Garden, Kolkata. 4

OR

- (d) Herbarium 4
(e) Binomial nomenclature 4
(f) Bennettitalean theory of Angiosperm evolution 4
3. Describe Bentham and Hooker system of classification with its merits and demerits. 12

OR

Explain :

- (i) Floral structure of Malvaceae. 6
(j) Economic importance of family Apiaceae. 6
4. Comment on :
(k) Floral structure in Euphorbiaceae. 4
(l) Economic importance of Poaceae. 4
(m) Systematic Position of Lamiaceae. 4

OR

- (n) Economic importance of Solanaceae. 4
(o) Floral diagram of Asclepiadaceae. 4
(p) Inflorescence in Asteraceae. 4
5. Discuss on :
(q) Characteristics of Heartwood and Sapwood. 6
(r) Parenchyma and Collenchyma. 6

OR

- (s) Primary structure of Monocot root. 6
(t) Structure and function of Xylem. 6
6. Explain :
(u) Anomalies in Secondary structure *Bignonia* stem. 4
(v) Primary structure of Monocot stem. 4
(w) Internal structure of *Maize* leaf. 4

OR

- (x) Anomalous primary structure in *Boerhaavia* stem. 4
(y) Internal structure of *Nerium* leaf. 4
(z) Anomalies in Secondary structure *Dracaena* stem. 4
7. Comment on :
(a) Double fertilization and triple fusion. 4
(b) Development of male gametophyte. 4
(c) Anatropous ovule (well labelled diagram only). 4

OR

- (d) Nuclear endosperm. 4
(e) Suspended animation. 4
(f) Bisporic embryo sac. 4