

2015  
**BOTANY**  
 Paper : 103

**GYMNOSPERMS, ANGIOSPERMS ANATOMY AND  
 ADVANCED MORPHOLOGY**

Full Marks : 80

Time : 3 hours

*The figures in the margin indicates full marks for the questions*

Q1). Answer the following Multiple Choice Questions

(all are compulsory)

1×9= 9

- (i) Canada balsam is a natural pigment obtained from:
- Abies wallichina
  - Abies balsamea
  - Taxus baccata
  - Taxus brevifolia
- (ii) Match **List-I** with **List-II** and select the correct answer using the codes given below the list:

List-I	List-II
A. Tyloses	1. Suberised part of cortex
B. Exodermis	2. Responsible for plugging the lumen of vessels
C. Duramen	3. Inner part of wood
D. Knots	4. Wounds of fallen branches

Codes:

	A	B	C	D
(a)	1	2	3	4
(b)	1	2	4	3
(c)	2	1	3	4
(d)	3	2	1	4

(iii) Match List-I with List-II and select the correct answer using the codes given below the list:

List-I	List-II
A. Root	1. Cork cambium, cork and secondary cortex
B. Stem	2. Cork cambium
C. Phellem	3. Open, collateral, endarch
D. Periderm	4. Radial vascular bundle

Codes:

	A	B	C	D
(a)	3	4	2	1
(b)	4	3	2	1
(c)	3	4	1	2
(d)	4	3	2	1

(iv) The lacuna in the vascular bundles of monocot stems is:

- (a) Metaxylem
- (b) A mucilage cavity
- (c) Lysigenous water cavity
- (d) A large size vessels

(v) Cork is an excellent material for making bottle stopper because it is:

(2)

P.T.O.

- (a) Light
- (b) Easily available
- (c) Easily accessible
- (d) Airtight

(vi) Exchange the gases between air and the internal tissues of older corky stems takes place through

- (a) Sieve plates
- (b) Pits
- (c) Stomata
- (d) Lenticels

(vii) Grafting is not possible in monocots because

- (a) Lack cambium
- (b) Have scattered vascular bundles
- (c) Have parallel venation
- (d) Herbaceous habit

(viii) Cycas occurs commonly in:

- (a) South America
- (b) North America
- (c) South East Asia
- (d) Europe

(ix) Parietal placentation occurs in the family

- (a) Brassicaceae
- (b) Asteraceae
- (c) Solanaceae
- (d) Liliaceae

Q2). Distinguished between (any Four)

3×4 = 12

a. Primary and Secondary growth

(3)

P.T.O.

- b. Dicot and Monocot vascular bundle
- c. Axial and Parietal placentation
- d. Heart wood and Sap wood
- e. Inflorescence and Flower

Q3). Write an explanatory note on any Four of the following

5×4= 20

- a. Bennettitalean flower
- b. Xylotomy
- c. Wood anatomy
- d. Angiospermic flower
- e. Staminoidea
- f. Angiospermic characters of Gnetum

Q4). Answer the following questions (any Three) 9 x 3 = 27

- a. Write an account on characteristics, affinities and relationship of Gingoales 3+3+3=9
- b. Write a short account on
  - (i) Seed fern (ii) Economic importance of Gymnosperm
  - (iii) Types of stomata 3+3+3=9
- c. Defined meristems? Discuss on origin, types and activity of meristem. 2+7=9
- d. What is cambium? Describe origin, types and different function of cambium? 2+7=9

Q5). Answer the following questions (any One) 12

- a. Write an account on classification, characteristics, affinities and relationship of Cycadofilicales. 12
- b. Give an illustrated account of the shoot and root apex organization in Angiosperm 6+6=12