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Roll No. ....

5021

**M.Sc. (Final) EXAMINATION, 2016**

**BOTANY**

**Paper I/IV**

**(Taxonomy of Angiosperms, Plant Development  
and Reproduction)**

**Time allowed : Three Hours**

**Maximum Marks : 100**

**Part A (खण्ड 'अ') [Marks : 20]**

*Answer all questions (50 words each).*

*All questions carry equal marks.*

सभी प्रश्न अनिवार्य हैं । प्रत्येक प्रश्न का उत्तर पचास शब्दों से अधिक न हो । सभी प्रश्नों के अंक समान हैं ।

**Part B (खण्ड 'ब') [Marks : 50]**

*Answer five questions (250 words each),*

*selecting one question from each Unit.*

*All questions carry equal marks.*

प्रत्येक इकाई से एक प्रश्न चुनते हुए, कुल पाँच प्रश्न कीजिए । प्रत्येक प्रश्न का उत्तर 250 शब्दों से अधिक न हो । सभी प्रश्नों के अंक समान हैं ।

P.T.O.

**Part C (खण्ड 'स')**

[Marks : 30]

*Answer any two questions (300 words each).*

*All questions carry equal marks.*

कोई दो प्रश्न कीजिए । प्रत्येक प्रश्न का उत्तर 300 शब्दों से अधिक न हो । सभी प्रश्नों के अंक समान हैं ।

**Part A**

1. (i) What are the various components of taxonomy ?  
Briefly describe.
- (ii) Define holotypes and lectotypes.
- (iii) Discuss with example, the role of any one embryological character in plant taxonomy.
- (iv) Name different molecular techniques used in plant systematics.
- (v) Briefly discuss nature of quiescent centre.

- (vi) Name *two* plants having foliar stamens and two having open carpel.
- (vii) What is pollen polarity ? Name its different types.
- (viii) What are double fertilization and triple fusion ?
- (ix) Write functions of the suspensor.
- (x) Define diplospory.

## **Part B**

### **Unit I**

2. Write a brief note on 'concept of species'.
3. Discuss the principles of nomenclature stated by ICBN-VIENN CODE-2005.

## Unit II

4. With suitable examples, discuss role of any *two* palynological characters in plant taxonomy.
5. Briefly describe variation in types and arrangement of florets in capitulum.

## Unit III

6. How plants and animal differ in their development ?
7. Describe different types and evolution of placentation with the help of diagrams only.

## Unit IV

8. What is self-incompatibility ? Discuss its significance in plant reproduction.
9. Briefly discuss morphological nature of endosperm.

## **Unit V**

10. With examples describe adventive polyembryony and its significance.
11. Describe development of a monocot embryo.

## **Part C**

### **Unit I**

12. Discuss merits and demerits of Bentham and Hooker's classification and compare it with that proposed by Engler and Prantl.

### **Unit II**

13. Write a brief note on centre of origin of Angiosperms.

### **Unit III**

14. Discuss molecular aspect of development of shoot apical meristem.

#### **Unit IV**

15. Diagrammatically represent various types of embryo sacs.

#### **Unit V**

16. Define and describe various types of Apomixis.