

2013

BOTANY

( Major )

Paper : 4.1

**( Morphology, Palynology and Embryology  
of Angiosperms )**

Full Marks : 60

Time : 2½ hours

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

1. Answer the following : 1×7=7

- (a) Name the structure which acts as the mother cell of the male gametophyte.
- (b) What are the chief constituents of pollenkit?
- (c) Name the two types of monosporic embryo sac.
- (d) What is amphitropous ovule?
- (e) What is porogamy?

(f) Name a family which exhibits superficial placentation.

(g) What is coconut milk factor?

2. Answer the following : 2×4=8

(a) What do you understand by P-tapetum and C-tapetum?

(b) Discuss the role of synergids in the process of fertilization in angiosperms.

(c) Mention the important features of the helobial endosperm.

(d) What is polyspermy?

3. Answer the following (any three) : 5×3=15

(a) Describe the endothecium.

(b) Describe the nucellus tissue in megasporangium.

(c) Describe the induced polyembryony and factors affecting this process.

(d) What are androgenic haploids? Explain its importance.

(e) Which types of stamen you consider most primitive? Describe the evolutionary trends in stamen.



4. Answer the following :

10×3=30

- (a) Describe the various concepts of morphology of carpel.

Or

What is an inferior ovary? Describe in detail about the appendicular theory of inferior ovary.

- (b) What is the modern palynology? Explain its different applications.

Or

Describe in detail the development of male gametophyte in angiosperms.

- (c) Describe the various apomictic methods found in angiosperms.

Or

What are the different types of parthenogenesis? Describe induced parthenogenesis and significance of parthenogenesis.

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