

2018

BOTANY

( Major )

Paper : 4-1

( Morphology, Palynology and Embryology  
of Angiosperms )

Full Marks : 60

Time : 3 hours

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

1. Answer the following : 1×7=7

- (a) Name the characteristic inflorescence found in Lamiaceae.
- (b) Give an example of tree where phyllode is found.
- (c) Name the gymnospermic taxon which forms a bridge in between gymnosperms and angiosperms.

- (d) Name the characteristic pollen sac found in Orchidaceae.
- (e) What is egg apparatus?
- (f) What is fertile telome?
- (g) What is cap block?

2. Answer the following : 2×4=8

- (a) What is sporopollenin? Mention its function.
- (b) Give a diagrammatic sketch of an inferior ovary with proper labelling.
- (c) Draw a polygonum type of embryo sac with proper labelling.
- (d) What is apomixis?

3. Write short notes on any *three* of the following : 5×3=15

- (a) Origin of head from dichasium
- (b) Primitive stamen
- (c) Biological importance of pollen kit
- (d) Double fertilization and its significance
- (e) Structure of a typical megasporangium

4. Answer the following : 10×3=30

- (a) What is phyllode theory? Describe the different aspects of this theory. 2+8=10

*Or*

Describe with neat diagram the different types of cohesion and adhesion of stamens. 5+5=10

- (b) Describe in detail with proper diagram about the development of female gametophyte. 10

*Or*

What is germ pores? Describe with neat diagram the different steps involved in the formation of male gametes. 1+9=10

- (c) How does endosperm form? Describe different types of endosperms. What is ruminant endosperm? 2+6+2=10

*Or*

Describe the development of a typical monocotyledonous embryo with suitable diagram. 10

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