



## Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)

Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC

Coimbatore - 641 043, Tamil Nadu, India

### Master's Degree Examination – May 2025

#### II Semester

Class : I P.G.  
Major : Botany

Time: 3 Hours  
Max. Marks: 100

#### 23MBOC09 Embryology of Angiosperms

##### Course Outcomes:

CO1: Students gain knowledge on the reproductive phases of plant system

CO2: Gain knowledge on origin and development of embryological structures

CO3: Understand the fertilization process

CO4: Gain knowledge on the process of embryo development

CO5: Understand the development and role of endosperms

##### Part A

10 x 1 = 10

##### Choose the Correct Answer

1. The type of tapetum characterised by an early breakdown of inner and radial wall is called CO1K1  
a. parietal      b. invasive      c. nuclear      d. anuclear
2. The oily layer forming a thick viscous coating over the pollen grain surface is CO1K1  
a. oviola      b. pollenkitt      c. micosome      d. alveoli
3. The ovular structure directing the growth of pollentube towards micropyle is termed CO2K1  
a. haustoria      b. nucellus      c. obturator      d. integument
4. The synergid wall is differentiated into finger like projections known as CO2K1  
a. micropyle      b. filiform apparatus      c. endothelium      d. polar body
5. The X-Body represents the remains of CO3K1  
a. egg      b. vegetative nucleus      c. exine      d. intine
6. The 'secretory zone' is present in CO3K1  
a. pollen tube      b. style      c. pollen grain      d. synergid
7. Suspensor is associated with the chief function of nutrition of CO4K1  
a. pollen      b. egg      c. proembryo      d. seedling
8. The first division of zygote is vertical in ----- type embryogeny. CO4K1  
a. onagrad      b. asterad      c. caryophyllid      d. piperad
9. Among the following ----- family of the Angiosperm does not form endosperm. CO5K1  
a. Annonaceae      b. Malvaceae      c. Orchidaceae      d. Piperaceae
10. The ploidy of majority of endosperms of the Angiosperm is CO5K1  
a. haploid      b. diploid      c. triploid      d. quadriploid

##### Part B

5 x 6 = 30

##### Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. Examine the nuclear behaviour in tapetal cells. CO4K1

(or)

- 11.b. Describe the pollen wall development. CO4K1

- 12.a. Report the types of ovules in Angiosperms. CO2K3  
(or)
- 12.b. Discriminate hypostase from epistates with examples. CO2K3
- 13.a. Infer the methods of entry of pollen-tube. CO3K3  
(or)
- 13.b. Establish the structural significance of pollen tube wall. CO3K3
- 14.a. Explain the development of crucifer type of embryogeny. CO4K1  
(or)
- 14.b. Explain Solanad type of embryogeny. CO4K3
- 15.a. Interpret the structure of ruminant and helobial endosperms. CO5K2  
(or)
- 15.b. Judge the functions of different types of endosperms. CO5K4

**Part C**

**5 x 12 = 60**

**Answer ALL questions**

**Each answer should not exceed 800 words or four pages**

- 16.a. Illustrate the microsporogenesis. CO1K3  
(or)
- 16.b. Infer the development of anther wall in Angiosperms. CO1K3
- 17.a. Illustrate the tetrasporic embryosac development in Angiosperms. CO2K3  
(or)
- 17.b. Demonstrate the organisation of female gametophyte in Angiosperms. CO2K2
- 18.a. Record the events from the germination till the entry of pollen tube into the embryosac. CO3K2  
(or)
- 18.b. Describe double fertilization and its significance. CO3K2
- 19.a. Establish the *Caryophyllad* type embryogeny. CO4K3  
(or)
- 19.b. Assess the development of monocot embryo. CO4K4
- 20.a. Describe the structure and development of nuclear endosperm. CO5K2  
(or)
- 20.b. Describe the development of cellular endosperm and haustoria. CO5K2

\*\*\*\*\*