Total number of printed pages–7

63/1 (SEM–5) CC11/BOTHC5116

2024

BOTANY

Paper : BOTHC5116

(Reproductive Biology of Angiosperms)

Full Marks : 60

Pas Marks : 24

Time : Three hours

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

1. Answer the following questions ***(any five)***: 1×5=5

   (i) A typical dicot anther is—

   (a) 2 lobed 4 sporiangiate

   (b) 4 lobed 2 sporiangiate

   (c) 1 lobed 2 sporiangiate

   (d) 2 lobed 2 sporiangiate

Contd.

(ii) Residual or persistent nucellus is known as—

(a) Perisperm

(b) Pericarp

(c) Integuments

(d) Tapetum

(iii) In monosporic embryo sac of flowering plants, the number of nuclei that get surrounded by cell walls and thus organized into cells is—

(a) 8

(b) 6

(c) 5

(d) 7

(iv) Pollen grains are tricoplate, if they have—

(a) three germ pores

(b) two germ pores

(c) one germ pore

(d) many germ pores

(v) The development of endorsperm of areca nut is—

(a) Cellular type

(b) Nuclear type

(c) Helobial type

(d) None of the above

(vi) The point where funicle joins with ovule is known as—

(a) Chalaza

(b) Micropyle

(c) Hilum

(d) Integument

(vii) Devices for self pollination are—

(a) Dicliny or unisexuality

(b) Dichogamy

(c) Heterostyly

(d) None of the above

(viii) Which of the following is surrounded by callose wall ?

(a) Male gamete

(b) Egg

(c) Microspore mother cell

(d) Pollen grain

(ix) Exine of pollen grain is made up of—

(a) Pectocellulose

(b) Lignocellulose

(c) Pollen kitt

(d) Sporopollenin

(x) Apomictic embroys in Citrus arise from—

(a) Diploid egg

(b) Synergids

(c) Mature sporophytic tissue

(d) Antipodal cells

2. Answer the following questions : ***(any five)*** 2×5=10

(a) Name the famous Indian Embryologist and the book written by him.

(b) Give *any two* evidences to prove the foliar nature of floral parts.

(c) What is pollen storage ?

(d) What is MGU ?

(e) What are autochory and allochory ?

(f) Mention the differences between apomixis and parthenocarpy.

(g) Differentiate between anatropous and orthotropous ovule.

3. Answer the following questions : ***(any five)*** 5×5=25

(a) Write about the significances of polyembryony in flowering plants.

(b) Explain ABC model of flower development.

(c) What is microsprogenesis ? Describe the process of microsporogenesis in angiosperms. 1+4=5

(d) Illustrate the structure of a mature seed with labelled diagram.

(e) Write a concise note on contribution of E. Strasburger towards the development of embryology of flowering plants.

(f) Describe floral mechanisms favouring cross pollination citing examples.

(g) Write a concise note on scope of palynology.

(h) Briefly describe the wall structure of an angiospermous pollen grain with a labelled diagram.

(i) What is a tetrasporic embro sac ? Draw and label a mature Plumbago type of tetrasporic embryo sac. 2+3=5

4. Answer the following questions : ***(any two)*** 10×2=20

(a) What is embryogenesis ? Elucidate stage of embryo development in a typical dicot plant. How do a monocot embryo differ from dicot embryo ?

(b) What is self-incompatibility ? Describe the different methods to overcome self incompatibility in plants. 2+8=10

(c) What is female gametophyte in angiosperms ? Describe about the structure and organization of a typical embryo sac found in angiosperms. 1+9=10

(d) Define double fertilization. Explain the process of double fertilization in an angiospermic plant. Write its importance. 1+7+2=10

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