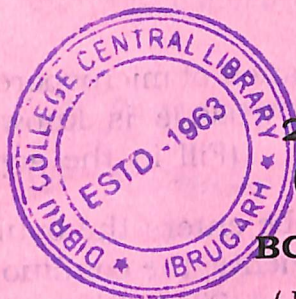


Total number of printed pages-5



3 TDC (Special) BOT M 1

2016

(July)

**BOTANY**

(Major)

Qup 1380 S (182)  
23/05/17

Paper : 30100

**(Anatomy, Embryology and Biostatistics)**

Full Marks : 81

Time : Three hours

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

Answer as directed :

1×8=8

(a) \_\_\_\_\_ is the enucleated element of phloem. (Fill in the gap)

(b) A dicot root differs from monocot root in having piliferous layer / exodermis / radial vascular bundle / ill-developed pith. (Choose the right answer)

Contd.



- (c) Name the *two* types of cells that make up mesophyll.
- (d) The process of formation of microspores from sporogenous tissue is known as \_\_\_\_\_. (Fill in the gap)
- (e) When the pollen tube enters the ovule through the integuments, the condition is described as \_\_\_\_\_. (Fill in the gap)
- (f) Fritillaria type of embryo sac is tetrasporic 4-nucleate/tetrasporic 8-nucleate/tetrasporic 16-nucleate/none of these.

(Choose the right answer)

- (g) Give the formula for computing coefficient of variance.
- (h) The ratio of frequency of the class to the total frequency is called cumulative frequency / relative frequency / percentage frequency / frequency distribution.

(Choose the right answer)

2. Write short accounts on the following :

- (a) Leaf trace and leaf gap 3
- (b) Intraxylary phloem and interxylary phloem 3

- (c) Endosperm haustoria and its function 3

- (d) Parthenogenesis and parthenocarp 3

- (e) Histogram and frequency polygon 4

3. What is meant by anomalous secondary growth in thickness? With suitable sketches, describe the phenomenon in a dicotyledonous stem you have studied. 3+6+3

Or

With suitable sketches, give an account of dermal tissue system from anatomico-physiological consideration. 4+8

4. Write explanatory notes on : **(any three)** 5×3=15

- (a) Theories of apical meristem

- (b) Laticiferous tissues

- (c) Heartwood and sapwood

- (d) Anatomical differences of  $C_3$  and  $C_4$  plants

- (e) Origin, structure and function of tyloses.



5. (a) State the criterion on which embryo sacs are classified. With the help of proper sketches and two illustrations, describe the *Peperomia* type of embryo sac. State the post-fertilization changes that occur in the embryo sac leading to the formation of seed.

Or

With the help of suitable diagram, give an account of the development of nuclear endosperm in angiosperms. How can it be distinguished from cellular type?

- (b) Write short notes on: **(any two)**

- Recurrent apomixis
- Origin of polyembryony
- Development of dicotyledonous embryo
- Structure of pollen grain and its viability

6. What do you mean by 'test of significance'? When and how is this test used in biological science? Discuss the test with suitable examples.

Or

Define mean, median and mode. Calculate mean, median and mode from the data given in the following table :

Class interval :	16-20	21-25	26-30	31-35	36-40
Frequency :	04	04	09	07	13
Class interval :	41-45	46-50	51-55	56-60	61-65
Frequency :	03	03	02	02	03