

**2021**

*Time : 3 hours*

*Full Marks : 75*

*Pass Marks : 33*

*Candidates are required to give their answers in their own words as far as practicable.*

*The figures in the margin indicate full marks.*

*Answer five questions, selecting at least two from each Group and Q. No. 1 is compulsory.*

1. Select the correct answer from the options given below : 1×15 = 15
- (a) The Histogen theory was proposed by :
- (i) Foster
  - (ii) Hanstein

- (iii) Schimidt
  - (iv) None of them
- (b) Secondary cortex is derived from :
- (i) Protoderm
  - (ii) Procambium
  - (iii) Apical meristem
  - (iv) Phellogen
- (c) The lateral root develops from :
- (i) Pith
  - (ii) Epidermis
  - (iii) Pericycle
  - (iv) Endodermis
- (d) Largest number of chloroplasts in the leaf found in :
- (i) Guard cells
  - (ii) Bundle sheath
  - (iii) Spongy tissue
  - (iv) Palisade tissue

(e) Tyloses occur in :

- (i) Secondary phloem
- (ii) Secondary xylem
- (iii) Cork cells
- (iv) Callus tissue

(f) What are the parts of Periderm ?

- (i) Phellem, phellogen, phelloderm
- (ii) Cortex, dermatogen, phelloderm
- (iii) Periblem, phellogen, phelloderm
- (iv) Periblem, phellogen, plerome

(g) Formation and differentiation of pollen grains in anther is :

- (i) Double fertilization
- (ii) Spermiogenesis
- (iii) Microsporogenesis
- (iv) Megasporogenesis

(h) Vascular Cambium produces :

- (i) Xylem

- (ii) Phloem
  - (iii) Xylem and Phloem
  - (iv) Xylem, Phloem and Vascular rays
- (i) On maturation megasporangium of an angiospermic plant forms :
- (i) Embryo
  - (ii) Endosperm
  - (iii) Cotyledons
  - (iv) Seed
- (j) Female gametophyte of angiosperms is represented by :
- (i) Megaspore mother cell
  - (ii) Nucellus
  - (iii) Ovule
  - (iv) Embryo sac
- (k) A drug from roots which cures mental disorders and reduces blood pressure is obtained from :
- (i) **Brassica oleracea**

- (ii) **Ficus elastica**
  - (iii) **Rauwolfia serpentina**
  - (iv) **Hevea brasiliensis**
- (l) Richest source of protein amongst the following is :
- (i) Maize
  - (ii) Wheat
  - (iii) Rice
  - (iv) Ground nut
- (m) Pulses belong to family :
- (i) Cruciferae
  - (ii) Malvaceae
  - (iii) Gramineae
  - (iv) Leguminosae
- (n) Which one is a source of rubber ?
- (i) **Ficus elastica**
  - (ii) **Hevea brasiliensis**

- (iii) **Cedrus deodara**
- (iv) **Parthenium hysterophorus**
- (o) **Lycopersicum esculentum** is the botanical name of :
  - (i) Tomato
  - (ii) Potato
  - (iii) Radish
  - (iv) Cabbage

### **Group – A**

- 2. Give an account of types and structure of meristematic tissues. What are the main functions of these tissue ? 15
- 3. Write a note on anatomical adaptations in Hydrophytes with suitable examples and diagram. 15
- 4. Describe any three in the following with the help of suitable diagram : 5×3 = 15
  - (a) Secondary growth in plants
  - (b) Formation of cambium ring

- (c) Heart wood and sap wood
- (d) Anamalous secondary growth in **Dracaena**
5. Give an account of structure of Anther, microsporogenesis and microgametogenesis..  
15
6. Write short notes on any **three** of the following :  
5×3 = 15
- (a) Anther culture
- (b) Endosperm
- (c) Embryo culture
- (d) Megasporogenesis

**Group – B**

7. Mention the importance and medicinal value of any five medicinal plants. 15
8. Give the method of extraction, properties and economic uses of the following : 5×3 = 15
- (a) Mustard
- (b) Ground nut
- (c) Coconut

9. Write a note on plant biodiversity. 15
10. Write short notes on the following :  $7\frac{1}{2} \times 2 = 15$
- (a) Recycling of wastes
  - (b) Biogas resources

