



Summer Term Exam ., August 2019
Plant Morphology and Anatomy (221B)
Second level Students, Faculty of science

Exam Date: 7/ 9/ 2019.
Time allowed: 2 hours.
Total Marks: 50 Marks

Part I: Plant Morphology

Answer FIVE questions only (10 marks)

- Q1- Describe the structure of a seed? Differentiate between endospermic and exendospermic seeds?
- Q2- Describe with drawing different types of venation found in Angiospermic leaves?
- Q3- Classify buds depending up on their location on the plant body and their nature? Give their function?
- Q4- What are the two major types of roots? How do they differ from one another? Name and draw two types of each one?
- Q5- Define seed dormancy and mention its causes?
- Q6- Write an account of underground stems? Mention the purpose of their modification?
- Q7- Write with drawing short notes on morphological structure of the root (regions of root)? Mention its function?

Part II: Plant Anatomy

Answer the following questions (40 Marks)

- Q1- Give reasons for FIVE only of the following: (10 Marks)
- Parenchyma is considered simple and primitive tissue.
 - Collenchyma support rapidly growing organs of plant.
 - Xylem vessels are wide, hard and strongly lignified.
 - Sieve tubes have specialized perforated cross walls and sometimes loss their function.
 - Secondary growth does not occur in all Angiosperms.
 - Gymnospermic xylem is considered non porous wood while Angiospermic xylem is considered porous.

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Q2- What are the various criteria on the basis of which meristems can be classified? Give a brief account of various types of meristems based on their functions and locations in the plant body? List the characteristic features of the secondary meristem? (7 Marks)

Q3- A- Write short notes with drawing on THREE only of the following: (9 Marks)

I- Anomalous secondary growth in *Dracaena* stem

II- Interxylary phloem

III-Annual rings

IV- Heart wood

B - Discuss briefly THREE only of the following: (6 Marks)

I- Collateral vascular bundles

II- Laticiferous tissue

III-Stinging hair

IV- Bark

Q4- Draw with labelled diagrams FOUR only of the following: (8 Marks)

a- Four types of the least specialized permanent tissue in plant body.

b- Any four types of epidermal outgrowths.

c- Pattern of lignification in xylem vessels.

d- Two types of resin and oil glands.

e- Any three types of sclereids.

Good luck

Prof. M.A. Elmagdy