

M Sc. Botany
Second Semester
Anatomy, Microtechnique & Evolution
(MSB-07)

Duration: 3Hrs.

Full Marks: 70

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

1. Write answers of any five questions in short.

5 × 2=10

- a) What is vascular bundle?
- b) Define casparian strip.
- c) What type of vascular tissue is found in root?
- d) What is branch trace?
- e) What is natural evolution?
- f) What is light microscope?
- g) What are secondary trichomes?

2. Write short notes on any five.

5 × 3=15

- a) Genetic drift
- b) Cork Cambium
- c) Evolutionary time scale
- d) Abscission of floral parts
- e) Speciation
- f) Mutation
- g) Tissue fixation

3. Write answer in any five.

5 × 5=25

- a) What is anomalous secondary growth? Describe the process of anomalous secondary growth in Amaranthus.
- b) Describe the process of origin of branches and lateral roots in angiosperm.
- c) Write anatomical differences between Dicot and monocot stem.
- d) What is microtomy? What are the types? Discuss it
- e) Prepare a note on "Modern synthetic theory of evolution".
- f) "Concept of staining"Make a note on it. What are the types of stain and their composition?
- g) Make a note on the "Darwinism".

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(The figures in the margin indicate full marks for the questions)

Duration: 20 minutes

Marks – 20

(PART A- Objective)

Write correct answer in the bracket ()

1×20=20

1. Ground tissue includes
a) All tissues except epidermis and vascular bundles ()
b) All tissues external to endodermis
c) All tissues internal to endodermis
d) Epidermis and cortex
2. Anatomically fairly old dicotyledonous root is distinguished from the dicotyledonous stem by
a) Absence of secondary phloem ()
b) Absence of secondary xylem
c) Position of protoxylem
d) Presence of cortex
3. Cyamose inflorescence is present in
a) Trifolium ()
b) Brassica
c) Solanum
d) Sesbania
4. Wood is a common name of
a) phloem ()
b) Secondary xylem
c) Cambium
d) vascular bundles
5. Secondary roots arise from
a) Pericycle ()
b) Sapwood
c) Endodermis
d) Hypodermis

6. Safranin stains
- Cellulose
 - Lignified wall
 - Starch
 - Protein
7. Grafting is not possible in monocots because they
- Lack auxins ()
 - No vascular cambium
 - Short of cytokinin
 - Delicate plants
8. Increase in length of plant axis is by
- apical meristem ()
 - Lateral meristem
 - Dermatogen
 - Periblem
9. In *Mirabilis* the abnormal secondary growth is due to abnormality in the
- Origin of cambium ()
 - Structure of cambium
 - Both of these
 - Behaviour of cambium
10. A living cell can be studied by means of
- Dark field microscope ()
 - Electron microscope
 - Phase-contrast microscope
 - Compound microscope
11. Organic compounds first evolved in earth required for origin of life are
- Proteins and amino acids ()
 - Proteins and nucleic acid
 - Urea and amino acid
 - Urea and nucleic acid
12. Analogous structures are
- Anatomically similar and functioning similarly ()
 - Anatomically similar but performing different functions
 - Anatomically different but performing similar functions
 - Anatomically different and functioning differently
13. Jurassic period of the Mesozoic era characterized by
- Dinosaurs become extinct and angiosperms appear ()
 - Radiation of reptiles and origin of mammal like reptile
 - Gymnosperms are dominant plants and first birds appear
 - Flowering plants and first dinosaurs appear
14. If a plant has only male flowers, the plant is _____ and the flowers are _____
- Dioecious; perfect ()
 - Monoecious; perfect
 - Monoecious; imperfect
 - Dioecious; imperfect

15. Which of the following trait is NOT shared by all living organisms

- a) Glycolysis
- b) Ribosomes
- c) Plasma membrane
- d) Cell wall

()

16. The first organisms are

- a) Chemoautotrophs
- b) Autotrophs
- c) Eukaryotes
- d) Chemoheterotrophs

()

17. "Origin of species" was written by

- a) Oparin
- b) Lamarck
- c) Weismann
- d) Darwin

()

18. A fruit is a mature

- a) Ovule
- b) Ovary
- c) Stigma
- d) Ovulate cone

()

19. From where do branch roots originate?

- a) Pericycle
- b) Apical meristem
- c) Vascular cambium
- d) Xylem

()

20. Which microscope can detect the depth of the object

- a) Dark field microscope
- b) Phase contrast microscope
- c) Scanning electron microscope
- d) Compound microscope

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