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(NEP—2020)

(3rd Semester)

BOTANY (MAJOR/MINOR)

(Agroforestry, Paleobotany and Palynology)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(SECTION : A—OBJECTIVE)

(Marks : 10)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. The negative biochemical influence exerted by some plants is called

- (a) amensalism () (b) allelopathy ()
(c) allelospoly () (d) allelochemicals ()

2. Which one of the following is a fertilizer tree?

- (a) *Tectona grandis* ()
(b) *Eucalyptus spp.* ()
(c) *Mangifera indica* ()
(d) *Casuarina equisetifolia* ()

3. The oldest known agroforestry system is

- (a) alley cropping ()
(b) taungya system ()
(c) shifting cultivation ()
(d) home garden ()

4. Cutting a pole tree at some height above the ground level to produce new shoots below the cut is called
- (a) thinning ()
 - (b) lopping ()
 - (c) pollarding ()
 - (d) coppicing ()
5. Horticulture operation commonly used to increase fruit production at a convenient height for harvesting is
- (a) bushing ()
 - (b) training ()
 - (c) bending ()
 - (d) pollarding ()
6. *Rhynia* belongs to a geological period of
- (a) Carboniferous ()
 - (b) Permian ()
 - (c) Cambrian ()
 - (d) Devonian ()
7. The geological time scale is a system used to
- (a) determine the age of rock ()
 - (b) describe the history of life on earth ()
 - (c) measure the rate of erosion ()
 - (d) calculate the distance between tectonic plates ()
8. The boundary between the Palaeozoic and Mesozoic era is marked by
- (a) the extinction of the dinosaurs ()
 - (b) the first appearance of flowering plants ()
 - (c) the formation of the Appalachian Mountains ()
 - (d) the Permian-Triassic mass extinction ()
9. Cytoplasm of the pollen grains is rich in
- (a) starch ()
 - (b) proteins ()
 - (c) minerals ()
 - (d) vitamins ()

10. The part of the pollen grains which is nearest to the centre of the tetrad is

- (a) polar pole ()
- (b) polar axis ()
- (c) distal pole ()
- (d) proximal pole ()

(SECTION : B—SHORT ANSWERS)

(Marks : 15)

Write short notes on any *five* of the following, taking at least *one* from each Unit :

3×5=15

UNIT—I

- 1. Effects of shifting cultivation
- 2. Multipurpose trees

UNIT—II

- 3. Positive tree-crop interaction
- 4. Hedging

UNIT—III

- 5. Importance of fossil study
- 6. Internal structure of *Rhynia*

UNIT—IV

- 7. Significance of pollen wall
- 8. Importance of palynology

(SECTION : C—DESCRIPTIVE)

(Marks : 50)

Answer *five* questions, taking at least *one* from each Unit : 10×5=50

UNIT—I

1. Give a brief account on the benefits and constraints of agroforestry. 10
2. Write short notes on the following : 5+5=10
 - (a) Homestead garden
 - (b) Alley cropping

UNIT—II

3. What is allelopathy? Write down the impacts on agroforestry. 1+9=10
4. Write notes on the following : 5+5=10
 - (a) Pollarding
 - (b) Pruning

UNIT—III

5. Give a brief account on geological time scale. 10
6. Write notes on the following : 5+5=10
 - (a) Importance of fossil study
 - (b) Stem anatomy of *Lyginopteris*

UNIT—IV

7. Describe the pollen wall structure and its significance with labelled diagram. 10
8. Write notes on the following : 5+5=10
 - (a) Role of pollen morphology in plant taxonomy
 - (b) Dispersal of pollen grains

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