C/17/DDE/M.Sc./Part-II/Bot./10

2016

M.Sc. Part-II Examination

BOTANY

PAPER—X

Full Marks : 100

Time : 4 Hours

The figures in the margin indicate full marks.

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

Illustrate the answers wherever necessary.

Use separate Answer-scripts for each Group.

Group-A

[Marks : 20]

Answer *all* question

1. Answer any *five* of the following : 5×2

(a) Mention two important chemical properties of soil.

(b) What are stress tolerance and stress avoidance ?

(Turn Over)

(c) Mention two biochemical changes in plants due to water stress.

(d) What is meant by lateritic soil ?

(e) How does seed viability differ from seed vigour ?

(f) What are day neutral plants in respect to flowering ?

(g) What are stress inducible proteins ?

(h) Mention two important internal factors causing seed dormancy.

2. (a) Beiefly describe the physical and chemical properties of soil.

(b) Diagrammatically represent the different soil horizons with proper labelling. 6+4

Or

(a) Classify plants on the basis of critical day length.

(b) Differentiate between orthodox seeds and recalcitrant seeds.

(c) Briefly describe the physiological role of ethylene. 4+3+3

Group-B

[Marks : 20]

Answer any *two* questions.

3. (a) What is gene pharming ?

(b) Write a note on aeromicro biological pathway for dispersion of microorganism.

(c) Why $^{e}gram^{+}$ bacteria are more important than $^{e}gram^{-}$ bacteria in the recovery of metals from ore ?

(d) Write down application of genetic engineering in agriculture. 2+3+2+3

4. Write brief notes on : 5×2

(a) Nutrient Overload

(b) Biomagnification

(c) Biopesticides

(d) Microbial leaching of copper

(e) Secondary sewage treatment.

5. (a) How Rhizobium inoculant is produced commercially ?

(b) What is leg haemoglobin ? Mention its role in nitrogen fixation.

(c) How recombinant technology helps to develop new means of nitrogen fixation ?

(d) Why is chlorine added to water used for drinking purposes? What does chlorine do ? 3+3+2+2

Group-C

[Marks : 20]

Answer *all* questions.

6. Write short notes on any *two* of the following : 2×5

(a) Forest management ;

(b) Mycorrhizal reclamation ;

(c) Mining and its effects on forest.

7. Briefly discuss the different causes of desertification. Mention the current status of forests in India. 5+5

Or

What do you mean by habitat management ? Define forest conservation. State the inter-relationship between forest and wild life. 2+2+6

Group-D

[Marks : 40]

Answer Q. No. *8* and any *three* from the rest.

8. Write short notes on any *five* of the following : 5×2

(a) World Environment Day,

(b) Ecotone,

(c) Eutrophication,

(d) Global Warming,

(e) Ozone hole,

(f) IUCN,

(g) Biogeochemical cycle,

(h) Joint Forest Management.

9. What is Deep ecology? Write briefly the basic tenets of Deep ecology. 3+7

10. What is acid rain ? Differentiate between dry precipitation and wet precipitation. Comment on the harmful effect of acid rain on aquatic life. 2+(2+2)+4

11. Define biodiversity. Discuss the various *in-situ* and *ex-situ* methods of biodiversity conservation. 4+(3+3)

12. Define mangroves. Write the different morphological and physiological adaptive strategies of mangroves. 4+(3+3)

13. Write notes on any *two* of the following : 2×5

    (a) *El Nino* ;

    (b) Ramsar site ;

    (c) Bhopal gas tragedy.
