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3 TDC (Special) BOT M 4

2016

(July)

BOTANY

(Major)

Paper : 30400

**(Environmental Biology,
Plant Geography and Evolution)**

Full Marks : 81

Time : Three hours

***The figures in the margin indicate
full marks for the questions.***

1. (a) Choose the correct term of the following : $1 \times 4 = 4$

(i) Study of reciprocal relationship between plant and environment is called environmental biology/ plant ecology/ phytogeography.

Contd.

(ii) Plants found in a particular area but not in any other place of the world is called rare/endemic/endangered plants.

(iii) Global warming as a normal process is harmful/helpful/not necessary for plants and animals of the earth.

(iv) The self-regulatory mechanism of ecosystem is called ecosystem function/ecosystem management/ecosystem homeostasis.

(b) Fill in the blanks :

1×4=4

(i) The respiratory roots of halophytes is called _____.

(ii) The detritus food-chain starts with _____ matter.

(iii) When the weathered rock particles mix with the organic matter then it becomes _____ soil.

(iv) Theory of germplasm was put forwarded by _____.

2. Write short notes on :

(a) Liebig's law of Minimum 3

(b) Interaction between higher plant and bacteria 3

(c) Origin of species 4

(d) Inverted pyramid of biomass 4

(e) Acid rain. 3

3. Explain the structure of plant community. How do you differentiate a mature plant community from one young plant community ? Discuss briefly the causes of plant succession. 5+5+5

Or

Write explanatory notes on :

(a) Analytic and synthetic characters of plant community 8

(b) Energy flow through ecosystem

4. Write an account on the vegetational pattern of Eastern Himalayas with special reference to the flora of Assam. 7+3

Or

Write on the following :

- (a) Endemism and endemic flora of Assam
(b) Climate and vegetation of India
5. Why do we consider that the evidences for organic evolution derived from biochemistry and genetics are most important ? Discuss some of these evidences with suitable examples. 5+3

Or

How do you justify that the evidences of evolution derived from molecular biology is utmost necessary for confirmation of an evolutionary line ? Discuss some of these evidences with examples. 5+3

6. Answer either [(a) and (b)] or [(c) and (d)] :

(a) Discuss briefly the conservation strategies generally adopted for conservation of renewable natural resources. How can you demarcate a biosphere reserve from a National Park ? 9+3

(b) Write what you know about IPR. 4

(c) Write how environmental pollution can be controlled using plant. 6

(d) Discuss how anthropogenic activities pose threat to our environment. In what way the activities of MAB helped to resolve these problems ? 5+5