HB-003-001511 Seat No. _____

B. Sc. (Sem. V) (CBCS) Examination

May / June - 2017

Botany : B - 503

(Ecology) (New Course)

Faculty Code : 003
Subject Code : 001511

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) Draw neat and labelled diagrams wherever necessary.
(2) Figures to the right side indicate full marks for the question.

1 Answer in very short : **20**

(1) Which technical terms are used for organisms utilize plants as well as animals as their food ?

(2) The running fresh water habitat is called....

(3) Amount of energy transferred from one trophic level to next trophic level (in percentage) is _____.

(4) Rate of conversion of light energy into chemical energy of organic molecules in an ecosystem is called_____

(5) Arrange the following zonation in vertical stratification from base to top in forest community : Herbs, Trees, Shurbs, Subterranean, Forest floor.

(6) Which frequency (percentage) range belongs to class-C in Raunkiaer (1934) frequency classes ?

(7) Give the formula for the calculation of frequency in plant community.

(8) In which biome where the subsoil remains frozen all times and the vegetation is formed of short shrubs and herbs ?

(9) Ecological succession on sand is called_____.

(10) Name different types of succession based on presence or absence of vegetation in the region.

(11) The number of individuals regenerated in a population in given time is called _____.

(12) In a parasitic food chain, the pyramid of numbers in a single tree is_____

(13) The lifecycle of plant in response to the rhythmic seasonal variations is called_____

(14) "Growth is dependent on the amount of food stuff that is present in minimum quantity". This statement is known as_____.

(15) What are the limiting factors ?

(16) What happens when two organisms occupy the same ecological niche ?

(17) What is Environmental Education ?

(18) Give the name of centre of excellence in Gujarat (Ahmedabad), established by Ministry of Environment and Forest.

(19) When the Environment (Protection) Act came into force ?

(20) Which segment of GPS is constituted by satellites ?

2 (a) Answer in short : (any three) **6**

(1) Explain : Secondary production.

(2) Discuss : Florastic method for the study of communities.

(3) Explain : Mortality.

(4) Write notes on : Community periodicity.

(5) What is the Wild Life Protection Act ?

(6) Explain : Stabilization in plant succession.

(b) Answer in brief : (any three) **9**

(1) Explain : Conservation as a basic concept of ecology.

(2) Define the density and give formula for calculation of density.

(3) Describe types of plant succession on the basis of nutritional status of dominant organisms.

(4) Write note on : Trophic niche.

(5) Explain : Control segment of GPS.

(6) Write note on : J-shaped growth curve.

(c) Answer in detail : (any two) **10**

(1) Describe the structure of grassland ecosystem.

(2) Discuss the Raunkiaer (1934) life forms based on the position of perennating buds.

(3) Give an account of the sequential stages of a typical hydrosere.

(4) Explain : Shelford's law of tolerance.

(5) What are the salient features of Environment Protection Act ? Briefly explain.

3 (a) Answer in short : (any three) **6**

(1) Define : Producers, Consumers.

(2) Explain : Fidelity.

(3) Write note on : initiating climatic causes of plant succession.

(4) What is Aute ecology ?

(5) Write note on : Green peace – an environment organization.

(6) Explain : Ecotone and Edge effect.

(b) Answer in brief : (any three) **9**

(1) Explain : Abiotic components of pond ecosystem.

(2) Write note on : Horizontal stratification.

(3) Discuss : Age Pyramid.

(4) Write note on : Habitat niche.

(5) Explain : Formal environmental education.

(6) Explain : Trends of plant succession.

(c) Answer in detail : (any two) **10**

(1) Explain : Energy flow in ecosystem with box and pipe model of Lindeman.

(2) Give location, climatic factor and plant life of tropical Savanah.

(3) Describe the pyramids of biomass in forest ecosystem and pond ecosystems.

(4) Discuss : Principle of limiting factors.

(5) Discuss : Creating public awareness, taking any two environmental problems as examples.
