

[62] Sardar Patel University, Vallabh Vidya Nagar

M.Sc: Environmental Science and Technology I Semester

Course: Ecology and Environmental Biology Course no: PS01CEST01

Date: 30th November, 2012

Time: 10.30 – 1.30 pm

Max.Marks: 70

- N.B: i. Draw neat and labelled diagrams wherever necessary to score full marks.
ii. All questions compulsory and carries equal marks.

Q1. Answer the following multiple choice questions (8X1)

- a. In carbon dioxide productivity method, CO₂ concentration is measured with _____.
i. Infrared gas. ii. ultraviolet column. iii. microwave column. iv. none.
- b. Productivity determination with radioactive material is done by _____.
i. 15 C ii. 14 C iii. 16 C iv. 40 K.
- c. Phosphateis a process in which phosphorus reacts with another substance to form a phosphate solid mineral.
i) Dissolution ii) Precipitation iii) Weathering iv) immobilization
- d. Porcelain crabs residing in soft corals is an example of
i) Mutualism ii) antibiosis iii) Parasitism iv) commensalism
- e. Which wavelength of light has more penetration capacity in water
i. violet ii. Indigo iii. Blue iv. Red
- f. Cold blooded animals are also called as
i. Poikilothermic ii. Ectothermic iii. Endothermic iv. i & ii.
- g. The following ecosystems are always inverted pyramid
i. Pond ecosystem ii. Grassland iii. both iv. none
- h. Shannon's indices number 3 indicates
i. not disturbed ecosystem ii. Highly disturbed iii. high diversity iv. i & iii

Q2. Answer any Seven of the following

(7X2)

- a. Single channel energy model
b. Photoperiodism of plants
c. Phytochrome
d. Competition
e. Natality of the population
f. Lake restoration
g. Basal cover
h. Thermal stratification
i. Coral reefs

Q3.A) Describe the Sulphur Cycle with suitable diagram? Explain the role of microorganisms involved in the Sulphur Cycle.

(6)

- B.i. Discuss the role of microorganisms involved in the Nitrogen Cycle (3)
ii. Explain the differences between Grazing Food chain and Detritus Food chain. (3)

OR

- B i. Enumerate various suitable examples related to the parasitism (3)
ii. Describe the different methods of productivity measurement (3)

Q4.A. Enumerate various principles to conserve Mangrove environments. (6)

- B.i) Explain biotic organisms of lotic environments (3)
- ii) Describe thermal regulation in homothermic animals (3)

OR

- B.i). Describe the different Life-form diversity (3)
- ii). Narrate IVI value (3)

Q5.A. Define Autecology and describe the various stages of biological clock of a plant. (6)

- B.i. Describe any three limiting chemical parameters of Lake waters (3)
- ii. How do you determine the community, based on quantitative characters? Explain (3)

OR

- B.i. Enumerate criterion used for Ramsar sites to recognize the wetlands. (3)
- ii) Write various functions and benefits of wetlands (3)

Q6. A. Explain the physical and chemical properties of Marine environment (6)

- B.i) Describe the chemical characters and degradation of petroleum hydrocarbons (3)
- ii) Write the chemical structure and occurrence of PAHs in different environments (3)

OR

- B.i. Enumerate Benthic organism in Marine environment (3)
- ii.) Discuss biotransformation of Poly-cyclic aromatic hydrocarbons and write its effect on the plants and animals (3)

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