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S-2624

M. Sc. - I (Sem. I) (Biosciences) Examination

March / April – 2011

Bio-104 : Environmental Biology

Time : **3** Hours] [Total Marks : **70**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ M. SC. - 1 (SEM. 1) (BIOSCIENCES)

Name of the Subject :

☛ BIO-104 : ENVIRONMENTAL BIOLOGY

☛ Subject Code No. : 2 6 2 4 ☛ Section No. (1, 2,.....) : NIL

Seat No. :

Student's Signature

(2) Marks are indicated against each question.

1 Attempt any **two** of the following : **18**

(1) Discuss the basic themes of ecology viz.interdependence energy and material flow.

(2) Explain the ecosystem from structural and functional aspects.

(3) What is homeostasis? Explain it with relavent examples how it operates in an ecosystem.

2 Attempt any **two** of the following : **18**

(1) State the laws of limiting factors and discuss how they can be treated as regulatory mechanisms in an ecosystem.

(2) Diagrammatically show flow of energy in an ecosystem with the emphasis on grazing as well as detritus flow.

(3) Explain the methods of estimating primary production.

3 Attempt any **two** of the following : **18**

(1) Classify the geochemical cycles based on reservoir pools and discuss why nitrogen cycle is considered as perfect as well as complex cycle ?

(2) Explain the difference between maximum natality and ecological natality with suitable examples. Give the mathematical expression of Absolute natality rate and specific natality rate.
(3) Derive the mathematical expression of biotic potential and discuss how it changes with changing conditions.

4 Attempt any **two** of the following: **16**

(1) What is the basic principle of remote sensing ? How this technique can be used to monitor the environment ?

(2) Explain what is photochemical smog and its adverse effects.
(3) Explain the importance of conservation of biodiversity ?