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RF-3861-62

M. Sc. (Sem. I) (Environment Science) Examination

April / May – 2010

ENS. : 103 : Environmental Microbiology

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

RF-3861

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. (Sem. 1) (Environment Sc.)**

Name of the Subject :

☛ **ENS. : 103 : Environmental Microbiology**

☛ Subject Code No. : **3 8 6 1** ☛ Section No. (1, 2,.....) : **1**

Seat No. :

Student's Signature

(2) Figures to the right indicate full marks of the question.

(3) Draw neat and labeled diagrams whenever necessary

(4) Both sections must be written in separate answer books.

1 Attempt any **three** of the following:- **12**

(1) Give the advantages and disadvantages of ultraviolet light and ionizing radiation as sterilizing agents.

(2) Define pH, acidophile, neutrophile, and alkalophile.

(3) Define thermal death point (TDP), thermal death time (TDT).

(4) Describe some ways in which macroelements and micronutrients are used by an organism.

(5) Define resolution, numerical aperture working distance, and fluorochrome.

2 Write the essay on:- **12**

Describe the nutritional requirements of the four major nutritional groups and give some microbial examples of each. What is a mixotroph?

OR

Methods for Chemical control of microorganisms.

3 Answer the following:-

(a) Define and explain the following terms:- **3**
Sterilization, sterilant, sanitization.

OR

germicide, bactericide, bacteriostatic

(b) Enlist the structure and function of every eucaryotic organelle. **3**

OR

(b) Draw a bacterial cell and label all important structures and functions. **3**

(c) Prepare a summary table showing the advantages of types of microscopes. **5**

OR

(c) Describe Koch's postulates. What are the molecular Koch's postulates and why are they important? **5**

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Name of the Examination :

☛ **M. Sc. (Sem. 1) (Environment Sc.)**

Name of the Subject :

☛ **ENS. : 103 : Environmental Microbiology**

☛ Subject Code No. : **3 8 6 2** ☛ Section No. (1, 2,.....) : **2**

Seat No. :

Student's Signature

(2) Figures to the right indicate full marks of the question.

(3) Draw neat and labeled diagrams whenever necessary

(4) Both sections must be written in separate answer books.

4 Attempt any **three** from the following:- **12**

(1) Define algae. How can algae be distinguished from the photosynthetic bacteria?

(2) Describe a typical yeast and a typical mold. Give economic importance of yeast.

(3) Define:- Viroid, prions, plaque.

(4) How does commensalism differ from protocooperation? Why is nitrification a good example of a commensalistic process?

(5) What is unique about the nuclei of some protozoa? Where can protozoa be found?

5 Answer the following:- **12**

(a) What are some typical organelles found in the protozoa.

Give ecnomic impact or human relevance of the protozoa.

OR

(a) Describe asexual reproduction of fungi. Define: sporangiospore, conidiospore, and blastospore.

(b) Describe the major technical advances and discoveries important in the early development of virology.

OR

(b) Describe the positive interaction between plants and microorganisms.

6 Answer the following:-

(a) Ellaborate a note on virus cultivation. **3**

(b) Discuss the differences between endomycorrhizae and ectomycorrhizae, **3**

(c) Give examples of genes that operate in microbe-animal associations. **5**
