1058

M.Sc. (Bio-Informatics) Fourth Semester

MBIN-8019: Informatics in Biodiversity and Bioethics

Time allowed: 3 Hours

Max. Marks: 60

NOTE: *Attempt* <u>*five*</u> *questions in all, including Question No. 1 which is compulsory and selecting atleast one question from each Unit.*

x-x-x

I. Attempt the following:-

    a) Write a short note on reproductive isolation.

    b) What is Co-speciation?

    c) What is the purpose of generating Indian Biodiversity Portal?

    d) Write a short note on Avibase.

    e) What are Bioethics issues in HIV/AIDS treatment?

    f) Define the Genetic Drift.

    g) Give one example each of therapeutic and non-therapeutic application of genetic engineering.

    h) What is Cartagene protocol?   (8x1½)

UNIT – I

II. a) Discuss the phenomenon of gene conversion and gene duplication with suitable examples.

    b) What is horizontal gene transfer, how does this gene transfer phenomenon take place, add a short note on its significance.   (8,4)

III. a) Discuss the various forms of species diversity and their impact on ecosystem.

    b) What is the phenomenon of macroevolution?   (8,4)

UNIT – II

IV. Discuss in brief the following web sources for Biodiversity informatics:-

    a) Fishbase

    b) Species 2000

    c) ATCC

    d) NCBI Taxonomy   (4x3)

V.   a) Give a description of general features of vectors of parasites.

     b) Briefly discuss the genome database of Mosquito.   (8,4)

UNIT – III

VI.   a) Discuss the importance of maintaining the Biosafety in biodiversity.

      b) Give an overview of National Governance of Biosafety in India.   (6,6)

VII.   a) Briefly discuss the Intellectual property rights and how are these important in biological research.

      b) Write a note on bioethics of *in-vitro* fertilization.   (8,4)

x-x-x