Course: MICROBIOLOGY PG

Semester	3
Paper Number	MMCI 4311
Paper Title	**ENVIRONMENTAL SUSTAINIBILITY**
No of credits	3
Non composite/composite	Composite
No. of periods assigned	3
Course description/objective	- To know the interactions of abiotic and biotic components of environment - To know about mechanism of succession
Reference List	Ecology-Dash
Evaluation	Theory: 30 (20 End sem + 10 CIA) Practical: 20 (10 End sem + 10 CIA) End semester Question Paper format: Theory 20 MARKS - SHORT QUESTION: FROM **7** QTNS **ANSWER 5 (EACH 2 MARKS)** = 5X2=10 - LONG QUESTION: FROM **4** QTNS **ANSWER 2 (EACH 5 MARKS)**= 2X5=10 10 marks end sem viva

ENVIRONMENTAL SUSTAINIBILITY
THEORY 30

The Environment: Physical environment; biotic environment; biotic and abiotic Interactions. Habitat and Niche: Concept of habitat and niche; niche width and overlap; fundamental and realized niche; resource partitioning; character displacement. Population Ecology: Characteristics of a population; population growth curves; Population regulation; life history strategies (r and K selection); concept of metapopulation – demes and dispersal, interdemic extinctions, age structured populations. Species Interactions: Types of interactions, interspecific competition, herbivory, carnivory, pollination, symbiosis. Community Ecology: Nature of communities; community structure and attributes; Levels of species diversity and its measurement; edges and ecotones. Ecological Succession: Types; mechanisms; changes involved in succession; concept of climax. Environmental Sustainability: Mineral cycling (C,N,P); primary production and decomposition. Applied Ecology: Environmental pollution; global environmental change; biodiversity: Status, monitoring and documentation; major drivers of biodiversity change; biodiversity. Management approaches: Conservation Biology: Principles of conservation, major approaches to management of biodiversity.

PRACTICAL: 20

General airborne organisms and their dominance, parametres of potable water, soil characters and the microbiota, ground quadrat method of determining plant frequency, Shannon Wiener index calculation

Reference:

Ecology-Dash