

M.Sc. BOTANY
Fourth Semester
PLANT ECOLOGY
(MSB – 402 D)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

Answer any four from Question no. 2 to 8
Question no. 1 is compulsory.

1. Define population. How is it different from community? Write a note on the impact of environmental resistance on population. (2+3+5=10)
2. Write an essay on nitrogen cycle citing a suitable example an ecosystem. (10)
3. What do you understand by Age structure in population ecology? What conclusion would you draw by studying it? Name different factors that may change the structures. (2+6+2=10)
4. Who did first propose the niche concept in ecology? Note down the differences between habitat and niche. Describe the different types of niche. (1+4+5=10)
5. Write notes on: (5+5=10)
 - i. Ecological efficiencies
 - ii. Polyclimax theories
6. Differentiate between: (5+5=10)
 - i. Allopatric and sympatric species
 - ii. r selection and k selection
7. What do you mean by ecological succession? Write a note on recent model on ecological succession. (4+6=10)

8. Define phytosociology. Write the importance of qualitative characters in phytosociological study.

(4+6=10)

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Duration: 20 minutes

Marks – 20

(PART A - Objective Type)

I. Choose the correct answer:

1×20=20

- i) Which of the following is not a stage of succession?
a. Germination
b. Nudation
c. Ecesis
d. Migration
- ii) Which of the following is correct?
a. $IP=BP-ER$
b. $IP=BP+ER$
c. $IP=BP \times ER$
d. $IP=BP/ER$
- iii) An ecotype is:
a. A local population
b. A genetically adapted population
c. (b) only
d. (a) and (b) both
- iv) Niche concept was given by:
a. Lindeman
b. Elton
c. Haeckel
d. Grinnell
- v) Biological nitrogen fixation is done by:
a. Nostoc
b. Azotobacter
c. Xanthomonus
d. All above
- vi) Which of the following pyramid is upright only?
a. Number
b. Biomass
c. Energy
d. All above
- vii) Leaf area can be calculated using:
a. Planimeter
b. Odometer
c. Nanometer
d. Hygrometer
- viii) Antibiosis is:
a. + interaction
b. - ve intraction
c. both
d. None of the above
- ix) Who proposed the relay floristic composition concept?
a. Clements
b. Egler
c. Engler
d. Odum
- x) Phenology is related to:
a. Seasonal variation
b. carbon dioxide concentration
c. soil quality
d. water quality
- xi) Which of the following is an example of mutualism?
a. Lichen
b. Eicchornia
c. Tentipholia
d. Vetiver
- xii) Who proposed the Law of minimum?
a. Hutchinson
b. Barber
c. Grinnell
d. Liebig
- xiii) Density means:
a. Numerical strength
b. Average number
c. Both a and b
d. Neither a nor b
- xiv) The term 'Succession' was coined by:
a. Wegner
b. Hult
c. Cowles
d. Du toit

