

2018

BOTANY

BOT-204

ECOLOGY, ENVIRONMENT AND PHYTOGEOGRAPHY

Full Marks: 80

Time: 3 Hours

The figures in the margin indicates full marks for the questions :

1. Choose write answer for the following multiple choice questions:

1x9=9

- i. Who coined the term Ecosystem?
 - a) Odum
 - b) Haeckel
 - c) Tansley
 - d) Mobius and Forbes
- ii. Which of the following temperature range is known as epilimnion?
 - a) 8-20
 - b) 21-22
 - c) 5-9
 - d) 9-24
- iii. What is the possible outcome of the competitive interactions-
 - a) Never ending competition
 - b) Resource partitioning
 - c) Population growth
 - d) Primary succession
- iv. If the producer in a community convert 10,000 cal from Sun into Biomass, how many of the calories will reach the tertiary consumer-
 - a) 1
 - b) 10
 - c) 100
 - d) 1000
- v. A zone where two distinct communities meet is called-
 - a) Ecoline
 - b) Ecotone
 - c) Keystone
 - d) Belt transect

vi. In a population, most of the individuals are of pre-reproductive and reproductive age groups. What will be the nature of age pyramid?

- a) Expanding
- b) Diminishing
- c) Stable
- d) Both expanding and diminishing

vii. An organism with low risk of dying young will have which type of survivorship curve?

- a) Type I
- b) Type II
- c) Type III
- d) None of the above

viii. Which of the following pyramids for a system can never be inverted?

- a) Pyramid of biomass
- b) Pyramid of number
- c) Pyramid of energy
- d) All pyramids

ix. Which niche concept explains many interactive environmental factors acting on organism?

- a) Spatial niche
- b) Fundamental niche
- c) Hypervolume niche
- d) Trophic niche

2. Answer the following short answer questions: (Any six) 2x6=12

- i. Define and differentiate between food chain and food web with a diagram.
- ii. What is population density? Differentiate between crude and ecological density.
- iii. What are pioneer species? What is the role of pioneer species?
- iv. How do biodiversity and biomass vary during ecological succession?
- v. Differentiate between spatial and tropical niche citing suitable example.
- vi. What is keystone species? Mention its significance.
- vii. What are Green house gases? Give examples.

3. Answer of the following questions :(any four) 5x4=20

- i. How are ecological interactions classified? Explain.
- ii. Describe aquatic ecosystem.

iii. What is Ecological Pyramid? Describe different Kinds of Ecological Pyramids.

iv. Explain causes and effects of global warming.

v. Write a short note on Endemism.

4. Answer of the following questions :(any three) 9x3=27

i. What is Ozone hole? State the significance of Ozone in the atmosphere? Name the ozone depleting Gases. Describe how depletion of ozone layer in atmosphere is taking place. (2+2+1+4=9)

ii. What is competitive exclusion? What are the possible outcomes of the competitive exclusion? What do you understand by resource partitioning and character displacement? (3+1+2.5+2.5=9)

iii. What is the difference between primary ecological succession and secondary ecological succession? What is the climax stage of an ecological succession? Give an account of the establishment process of different plant communities in primary succession? (2+2+5=9)

iv. Explain the principals of air pollution control. Name the different air pollution control technologies. (4+5=9)

5. Write elaborate notes: (Any two) 6x2=12

- i. Theory of Island Biogeography.
- ii. Continental drift theory.
- iii. Age structure of population.
- iv. Dynamic phytogeography.
