

Organisms and Populations — Assignment 1

Class 12 Biology · Topic-wise question bank covering every concept of the chapter · Narayan Gurukul Academy

Instructions: (1) Attempt all questions. This worksheet walks through every concept of the chapter, topic by topic.
(2) The interactive MCQ version of these questions (with instant answer reveal) is available on the notes page.
(3) Universal values: $g = 10 \text{ m/s}^2$ unless stated. Give answers with correct SI units.

Organism and Its Environment

MCQ Questions (choose the correct option)

1. An ecological niche is the
 - (A) functional role of a species
 - (B) physical space only
 - (C) number of species
 - (D) biomass
2. The environment of an organism includes
 - (A) biotic and abiotic factors
 - (B) only biotic
 - (C) only abiotic
 - (D) only temperature
3. Organisms and their environment interact at the level of the
 - (A) population
 - (B) organ
 - (C) cell
 - (D) gene only
4. The habitat is the
 - (A) physical place where an organism lives
 - (B) role of an organism
 - (C) population size
 - (D) food chain

1 Mark Questions

1. What is an ecological niche?
2. What is a habitat?
3. Name the two components of the environment.

2 Mark Questions

1. Differentiate between habitat and niche.
2. What is the scope of ecology at the organism level?

3 Mark Questions

1. Describe how organisms interact with their environment.
2. Explain the concept of an ecological niche.

Major Abiotic Factors

MCQ Questions (choose the correct option)

1. The most important abiotic factor affecting organisms is
 - (A) temperature
 - (B) colour
 - (C) sound
 - (D) smell
2. Water is important because it
 - (A) is the medium of life
 - (B) is a mineral
 - (C) provides energy
 - (D) provides structure only
3. Light affects organisms mainly through
 - (A) photosynthesis and photoperiod
 - (B) sound
 - (C) gravity
 - (D) pH
4. Soil is important because it
 - (A) supports plant growth
 - (B) provides light
 - (C) provides sound
 - (D) provides scent

1 Mark Questions

1. Name the major abiotic factors.
2. Why is temperature important?
3. Why is water important for organisms?

2 Mark Questions

1. How does light affect organisms?
2. How does soil affect organisms?

3 Mark Questions

1. Describe the major abiotic factors that affect organisms.
2. Explain the role of temperature and water in the distribution of organisms.

Responses to Abiotic Stress

MCQ Questions (choose the correct option)

1. Animals that maintain a constant internal environment are
 - (A) regulators
 - (B) conformers
 - (C) migrators
 - (D) hibernators
2. Winter dormancy in animals is called

- (A) hibernation
 - (B) aestivation
 - (C) diapause
 - (D) migration
3. Summer dormancy in animals is called
- (A) aestivation
 - (B) hibernation
 - (C) diapause
 - (D) migration
4. Diapause is a period of
- (A) suspended development
 - (B) active growth
 - (C) reproduction
 - (D) migration

1 Mark Questions

1. Differentiate between conformers and regulators.
2. What is hibernation?
3. What is aestivation?

2 Mark Questions

1. What is diapause? Give an example.
2. How do organisms escape unfavourable conditions by migration?

3 Mark Questions

1. Describe the responses of organisms to abiotic stress.
2. Explain the strategies used to survive extreme conditions.

Adaptations

MCQ Questions (choose the correct option)

1. Adaptations are
 - (A) features that help survival
 - (B) random changes
 - (C) temporary changes
 - (D) only structural
2. Camels are adapted to
 - (A) deserts
 - (B) polar regions
 - (C) oceans
 - (D) rainforests
3. The presence of blubber in polar animals helps in
 - (A) insulation
 - (B) digestion
 - (C) respiration

(D) excretion

4. Xerophytic plants adapt to

(A) dry conditions

(B) wet conditions

(C) cold conditions

(D) saline water

1 Mark Questions

1. What are adaptations?

2. Give one adaptation of a camel.

3. What is the role of blubber?

2 Mark Questions

1. Give two adaptations of desert plants.

2. How are polar animals adapted to cold?

3 Mark Questions

1. Describe the adaptations of organisms to their environment.

2. Explain the adaptations of desert plants and animals.

Population Attributes

MCQ Questions (choose the correct option)

1. The density of a population is measured as

(A) individuals per unit area

(B) total mass

(C) total energy

(D) total biomass only

2. Natality refers to

(A) birth rate

(B) death rate

(C) migration

(D) sex ratio

3. Mortality refers to

(A) death rate

(B) birth rate

(C) migration

(D) sex ratio

4. The number of individuals of the same species in an area is a

(A) population

(B) community

(C) biome

(D) ecosystem

1 Mark Questions

1. What is population density?
2. What is natality?
3. What is mortality?

2 Mark Questions

1. Name the attributes of a population.
2. How is population density estimated?

3 Mark Questions

1. Describe the attributes of a population.
2. Explain natality, mortality and age distribution.

Population Growth

MCQ Questions (choose the correct option)

1. The logistic growth model uses the constant
 - (A) K
 - (B) r only
 - (C) N only
 - (D) T
2. The exponential growth equation is
 - (A) $dN/dt = rN$
 - (B) $dN/dt = N/K$
 - (C) $dN/dt = r$
 - (D) $dN/dt = K$
3. The carrying capacity is represented by
 - (A) K
 - (B) r
 - (C) N
 - (D) t
4. In logistic growth, growth is
 - (A) limited by resources
 - (B) unlimited
 - (C) constant
 - (D) zero

1 Mark Questions

1. What is the exponential growth equation?
2. What is the logistic growth equation?
3. What is carrying capacity?

2 Mark Questions

1. Explain exponential growth with its equation.
2. Explain logistic growth and the role of K.

3 Mark Questions

1. Explain the exponential and logistic growth models.
2. Describe how resources limit population growth.

Life History Variation and Population Interactions

MCQ Questions (choose the correct option)

1. Cuscuta is an example of
 - (A) parasitism
 - (B) mutualism
 - (C) commensalism
 - (D) predation
2. The interaction in which both species benefit is
 - (A) mutualism
 - (B) commensalism
 - (C) parasitism
 - (D) predation
3. In commensalism, one species benefits and the other is
 - (A) unaffected
 - (B) harmed
 - (C) also benefited
 - (D) killed
4. Gause's competitive exclusion principle concerns
 - (A) competition
 - (B) mutualism
 - (C) parasitism
 - (D) predation

1 Mark Questions

1. Define mutualism.
2. Define commensalism.
3. Give one example of predation.

2 Mark Questions

1. What is Gause's competitive exclusion principle?
2. Differentiate between predation and parasitism.

3 Mark Questions

1. Describe the major population interactions with examples.
2. Explain competition and how organisms avoid it.