

**QB365 Question Paper Software**  
**12th Standard - Biology**

**Organisms and Populations Assertion and reason**

Exam Time: 00:20 Hrs

Date: 2025-09-29

Total Marks: 10

**Questions:**

1. **Assertion:** Microclimate generally differs from the prevailing regional climatic conditions.

**Reason:** Microclimate represents the climatic conditions that prevail at local scale or in areas of limited size.

**Codes:**

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

2. **Assertion:** Ectotherms are able to remain active under cold conditions.

**Reason:** Ectotherms are able to maintain a constant internal temperature, even when the temperature outside fluctuates.

**Codes:**

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

3. **Assertion:** Batesian mimicry is a protective mimicry.

**Reason:** Viceroy butterfly shows Batesian mimicry.

**Codes:**

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

4. **Assertion:** Emigration is outward movement of some individuals from local population.

**Reason:** Emigration is caused by occurrence of deficiencies and calamities.

**Codes:**

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

5.**Assertion (A):** In mutualism, both the populations are benefitted and neither can survive under natural condition without other.

**Reason (R):** Both populations are benefitted by the association, but their relationships are not obligatory.

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true and R is not the correct explanation of A.
- (c) A is true, but R is false.
- (d) A is false, but R is true.

6.**Assertion:** "The Biological Species" concept helps us to ask how species are formed.

**Reason:** The concept of biological species focuses our attention on the question of how reproductive isolation comes about.

**Codes:**

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

7.**Assertion :** Animals adopt different strategies to survive in hostile environment.

**Reason :** Praying mantis is green in colour which merges with plant foliage.

**Codes:**

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

8.**Assertion:** Daphnia populations in a water body, at different seasons of a year showed marked variations in their body morphology.

**Reason:** Cyclomorphosis in some organisms is influenced by the variations in temperatures prevailing in their water-bodies at different seasons

**Codes:**

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

9.**Assertion (A):** Interspecific interactions arise from the interaction of populations of two different species.

**Reason (R) :** They could be beneficial, detrimental or neutral (neither harm nor benefit) to one of the species or both.

**Codes:**

- a) If both A and R are true and R is the correct explanation of A
- b) If both A and R are true, but R is not the correct explanation of A
- c) If A is true, but R is false
- d) If A & R are false

10. **Statement I:** When resources are limited the competitively superior species will eventually eliminate the other species

**Statement II :** Herbivores and plants appear to be more adversely affected by competition than carnivores

**Codes:**

- a) I is true, but II is false
  - b) I is false, but II is true
  - c) Both I and II are true
  - d) Both I and II are false
- 

### Answers Key:

1. **(a):** Microclimate generally differs from the prevailing regional climatic conditions, because the microclimate represents the climatic conditions that prevail at local scale or in areas of limited size, such as the immediate surroundings of plants and animals.
2. **(d):** Endotherms (warm - blooded animals) can regulate their body temperature by physiological means and are able to maintain a more or less constant internal temperature, even when the temperature outside fluctuates (for example - birds and mammals). They have physiological mechanisms for keeping body temperature constant or within tolerance limits.; Ectotherms, (cold-blooded animals) cannot regulate their body temperature and are unable to maintain a constant internal temperature. Their body temperature tends to match with the environmental temperature in which they live, (for example-frogs and snakes).
3. (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
4. (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
5. A is true, but R is false.
6. (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

**Explanation:**

Ernst Mayr proposed the biological species concept, which defines species as groups of actually or potentially inter-breeding natural populations which are reproductively isolated from other such groups.

7. (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

**Explanation:**

Animals blend with the surroundings or back ground to remain unnoticed for protection and aggression.

8. (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

**Explanation:**

In Daphnia the cyclomorphosis (cyclic change in morphology) is seen. The morphology depends upon the temperature variation in water. So at different seasons of the year the Daphnia shows different morphology.

9. b) If both A and R are true, but R is not the correct explanation of A
10. b) I is false, but II is true

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