CBSE NCERT Based Chapter wise Questions (2025-2026)

Class-XII

Subject: Biology

Chapter Name : *Organisms and Populations* (Chapter : 11)

Total : 6 Marks (expected) [MCQ(1)-2 Mark, Assertion-Reason(1)-1 Mark, SA(1)-3 Marks]

Level - 1

MCQ Type Questions:

1. The interaction where one species is benefited and the other is neither harmed nor benefited, is called:
   Ⓐ Parasitism Ⓑ Mutualism Ⓒ Commensalism Ⓓ Competition
2. Which of the following shows an exponential population growth curve?
   Ⓐ J-shaped curve Ⓑ S-shaped curve Ⓒ Bell-shaped curve Ⓓ Linear curve
   [**Hint:** Unlimited resources]
3. The correct age pyramid for a stable population is:
   Ⓐ Pyramid-shaped Ⓑ Bell-shaped Ⓒ Inverted pyramid Ⓓ Irregular
   [**Hint:** Birth rate = death rate]
4. Which environmental factor does NOT include temperature, light or water?
   Ⓐ Abiotic Ⓑ Biotic Ⓒ Physical Ⓓ Climatic
   [**Hint:** Living component]
5. Lichens represent which interaction?
   Ⓐ Commensalism Ⓑ Parasitism Ⓒ Mutualism Ⓓ Predation
   [**Hint:** Algae + fungi both benefit]
6. The carrying capacity of an environment is denoted by:
   Ⓐ r Ⓑ K Ⓒ N Ⓓ t
   [**Hint:** Maximum sustainable population]
7. Which is a density-dependent factor?
   Ⓐ Flood Ⓑ Earthquake Ⓒ Predation Ⓓ Temperature
   [**Hint:** Depends on population size]
8. The study of relationship between organisms and their environment is called:
   Ⓐ Ecology Ⓑ Ethology Ⓒ Taxonomy Ⓓ Physiology
   [**Hint:** Ecosystem study]
9. Camouflage in animals is an example of:
   Ⓐ Competition Ⓑ Adaptation Ⓒ Parasitism Ⓓ Migration
   [**Hint:** Survival strategy]
10. Population density is measured as:
    Ⓐ Number of species Ⓑ Biomass per unit area
    Ⓒ Number of individuals per unit area Ⓓ Growth rate
    [**Hint:** Individuals + area]

Assertion-Reason based questions

Directions: The questions 11 to 15 have two statements—Assertion (A) and Reason (R). Of the two statements, mark the correct answer from the options given below :

A. Both Assertion and Reason are true and Reason is the correct explanation of the Assertion
B. Both Assertion and Reason are true but Reason is not the correct explanation of the Assertion
C. Assertion is true, but Reason is false
D. Assertion is false, but Reason is true

11. **Assertion:** Parasitism reduces host fitness.
Reason: Parasite lives inside the host and obtains nourishment.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

[**Hint:** Effect on host]

12. **Assertion:** Population growth becomes stable at carrying capacity.
Reason: Resources become unlimited at carrying capacity.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

[**Hint:** Resource availability]

13. **Assertion:** Migration helps organisms survive unfavorable conditions.
Reason: Migration increases competition.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

[**Hint:** Survival benefit]

14. **Assertion:** Competition occurs even between individuals of same species.
Reason: Resources are limited.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

[**Hint:** Intraspecific competition]

15. **Assertion:** Age pyramids help predict population growth.
Reason: They show age distribution of population.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

[**Hint:** Structure of population]

Short Answer Type Questions (3 marks)

16. Define population density. Mention any two methods of measuring it.

17. What is carrying capacity (K)?

18. Differentiate between exponential and logistic growth.

19. What is comensalism? Give one example.

20. What is amensalism? Give one example

21. Mention any three abiotic factors affecting organisms.

Long Answer Type Questions (5 marks)

22. Explain population growth with the help of growth curves.

[**Hint:** Exponential vs logistic]

23. Describe different population attributes.

[**Hint:** Density, birth rate, age structure]

24. Explain any five types of population interactions.

[**Hint:** +, –, 0 effects]

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25. Explain adaptations in organisms with reference to abiotic factors.

[**Hint:** Temperature, water]

26. What is an age pyramid? Describe its types.

[**Hint:** Expanding, stable, declining]

Case Based Questions

27. A population of deer lives in a forest reserve. Over a few years, the number of deer increases due to abundant food and absence of predators. Later, forest fires reduce vegetation, leading to a decline in the deer population.

a) What is meant by population density?

b) Name two methods used to measure population density in such cases.

c) How does availability of food affect population size?

d) Why did the deer population decline after forest fires?

Hints:

- Population density = number of individuals per unit area
- Direct counting, indirect methods
- Food → survival and reproduction
- Loss of food and shelter

28. A bacterial culture placed in a nutrient medium initially grows slowly, then rapidly, and finally the growth rate becomes constant.

a) Identify the type of population growth curve shown by the bacteria.

b) Name the phase during which growth is maximum.

c) What is carrying capacity?

d) Why does population growth become constant after some time?

Hints:

- S-shaped curve
- Log/exponential phase
- Maximum sustainable population
- Limited nutrients and space

29. Camel lives in hot desert conditions, while fish live in aquatic environments. Both show special adaptations to survive in their respective habitats.

a) Name one physiological adaptation of camel for desert life.

b) How do camels conserve water in their bodies?

c) Name one adaptation of fish that helps in aquatic respiration.

d) Why are adaptations necessary for survival?

Hints:

- Concentrated urine, less sweating
- Efficient kidneys
- Gills
- Survival in specific environment

ANSWER

1.	©	3.	Ⓑ	5.	©	7.	©	9.	Ⓑ	11.	Ⓐ	13.	©	15.	Ⓐ
2.	Ⓐ	4.	Ⓑ	6.	Ⓑ	8.	Ⓐ	10.	©	12.	©	14.	Ⓐ		

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