CBSE Class12 Biology
Chapter 13 Unsolved Important Question
Organisms and Populations

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Organisms and Populations

Section 'A'

Q. 1. State Gause's Competitive Exclusion Principle.

Q. 2. Name the type of association that the genus Glomus exhibits with higher plants.

Q. 3. What is the interaction called between Cucuta and shoe flower bush?

Q. 4. When and why do some animals like snails go into aestivation?

Q. 5. Mention any two significant roles predation plays in nature.

Q. 6. Why is the polar region not a suitable habitat for tiny humming birds?

Q.7. 10. Name the interaction in each of the following:

(a) Cuscuta growing on a shoe flower plant.

(b) Mycorrhizae living on the roots of higher plants

(c) Clown fish living among the tentacles of sea anemone

(d) Koel laying her eggs in crow's nest.

Q. 8. Mention the kind of biodiversity of more than a thousand varieties of mangoes in India represent. How is possible?

Q. 9. Write what do phytophagous insects feed on.

Q. 10. If 8 individuals in a laboratory population of 80 fruit flies died in a week, then what would be the death rate for population for the said period?

Q.11. When and why do some animals like frogs hibernate?

Section 'B'

Q.12. What is mutualism? Mention any two examples where the organisms involved are commercially exploited in agriculture.

Q.13. Describe the mutual relationship between fig tree and wasp and comment on the phenomenon that operates in their relationship

Q.14. Explain brood parasitism with the help of an example.

Q.15. Some organisms suspend their metabolic activities to survive in unfavorable conditions. Explain with the help of any four examples.

Q.16. Many fresh water animals cannot survive in marine environment. Explain.

Q.17. Construct an age pyramid which reflects a stable growth status of human Population.

Q.18. Apart from being part of the food chain, predators play other important roles. Mention any two such roles supported by examples.

Q.19. Explain why very small animals are rarely found in polar region.

Q.20. Some organisms suspend their metabolic activities to survive in unfavorable conditions. Explain with the help of any four examples.

Q.21. Why do clown fish and sea anemone pair up? What is this relationship called?

Q.22. Name the interaction in each of the following:

(a) Cuckoo lays her eggs in the crow's nest.

(b) Orchid grows on a mango tree.

(c) Ticks live on the skin of dogs.

(d) Sea anemone is often found on the shell of hermit crab?

Section 'C'

Q.23. How do organisms like fungi, zooplanktons and bears overcome the temporary short-lived climatic stressful conditions? Explain.

Q.24. How do snails, seeds, bears, zooplanktons, fungi and bacteria adapt to conditions unfavorable for their survival?

Q.25. (a) Name the two growth models that represent population growth and draw the respective growth curves they represent.

(b) State the basis for the difference in the shape of these curves.

(c) Which one of the curves represent the human population growth at present? Do you think such a curve is sustainable? Give reason in support of your answer.

Q.26. Name and explain the type of interaction that exists in mycorrhizae and between cattle egret and cattle.

Q.27. Since the origin of life on Earth, there were five episodes of mass extinction of species.

(i) How is the 'Sixth Extinction', presently in progress, different from the previous Episodes?

(ii) Who is mainly responsible for the 'Sixth Extinction'?

(iii) List any four points that can help to overcome this disaster.

Q .28. (a) Water is very essential for life. Write any three features both for plants and animals which enable them to survive in water scarce environment.

(b) How do organisms cope with stressful external environmental conditions which are localised or of short duration?

Q.29. Study the population growth curves shown above:

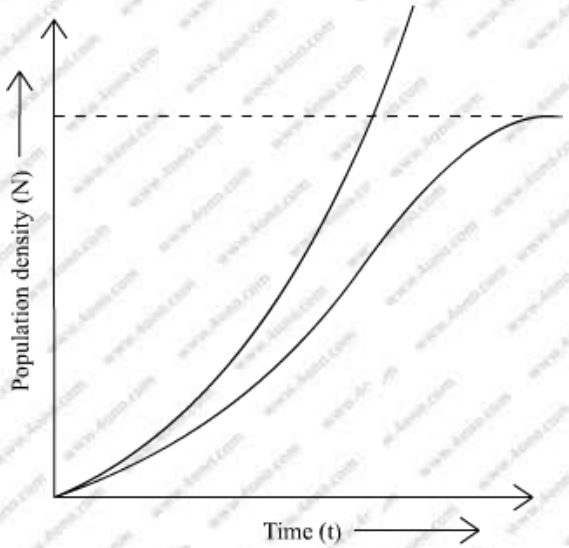
(i) Identify curves 'a' and 'b'.

(ii) Mention the conditions responsible for the curves ta' and 'b' respectively.

(iii) Give the necessary equation for the curve, 'b'.

Q.30. Predation is usually referred to as detrimental association. State any three positive roles that a predator plays in an ecosystem.

Q.31. Study the graph given below and answer the questions that follow:



(i) Write the status of food and space in the curves (a) and (b).

(ii) In the absence of predators, which one of the two curves would appropriately depict the prey population?

(iii) Time has been shown on X-axis and there is a parallel dotted line above it. Give the significance of this dotted line.

Q.32. Explain mutualism with the help of any two examples. How is it different from commensalism?

Q.33. Name the type of interaction seen in each of the following examples:

(i) Ascaris worms living in the intestine of human

(ii) Wasp pollinating fig inflorescence.

(iii) Clown fish living among the tentacles of sea - anemone

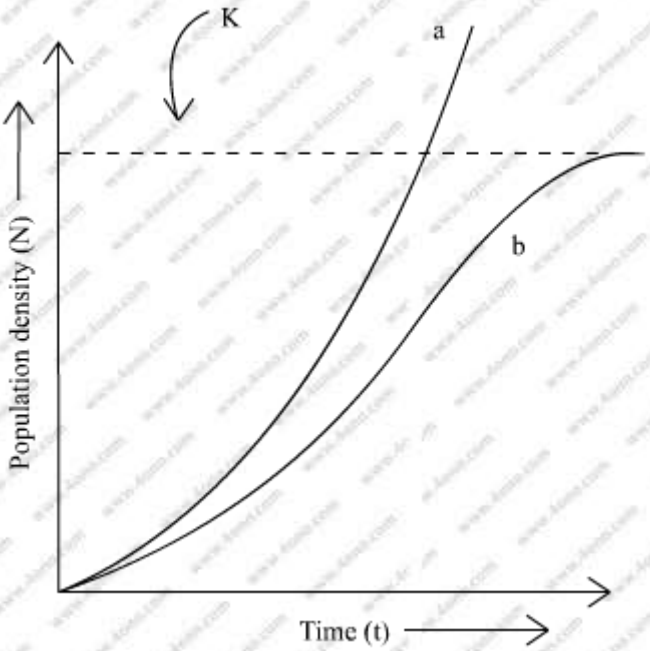
(iv) Mycorrhizae living on the roots of higher plants

(v) Orchid growing on a branch of a mango tree

(vi) Disappearance of smaller barnacles when Balanus dominated in the Coast of Scotland.

Q.34. Study the population growth curves in the graph given below and answer the questions which follow:

(i) Identify the growth curves 'a' and 'b'.



(ii) Which one of them is considered a more realistic one and why?

(iii) If $\frac{dN}{dt} = rN\left(\frac{K-N}{K}\right)$ is the equation of the logistic growth curve, what does K stand for?

(iv) What is symbolised by N?

Q.35. Explain mutualism with the help of any two examples. How is it different from commensalism?

Q.36. (a) Write the importance of measuring the size of a population in a habitat or an ecosystem.

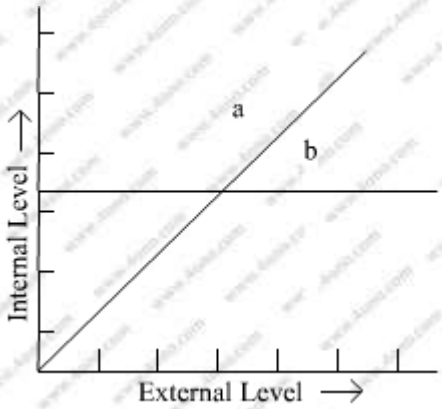
(b) Explain with the help of an example how the percentage cover is a more meaningful measure of population size than mere numbers.

Section 'D'

Q.37. "Analysis of age-pyramids for human population can provide important inputs for long-term planning strategies." Explain.

Q.38. Draw and explain a logistic curve for a population of density (N) at time (t) whose intrinsic rate of natural increase is (r) and carrying capacity is (k).

Q.39.



The given graph represents the organismic response to certain environmental condition (e.g., temperature):

(i) Which of there, 'a' or 'b', depicts conformers?
(ii) What does the other line graph depict?
(iii) How do these organisms differ from each other with reference to homeostasis?
(iv) Mention the category to which humans belong.

Q.40. (a) List the different attributes that a population has and not an individual organism.

(b) What is population density? Explain any three different ways the population density can be measured, with the help of an example each.

Q.41. (a) What is an age-pyramid?
(b) Name three representative kinds of age-pyramids for human population and list the characteristics for each one of them.

Q.42. (a) Represent diagrammatically three kinds of age-pyramids for human populations.

Q.43. (a) Why are herbivores considered similar to predators in the ecological context? Explain.

(b) Differentiate between the following interspecific interactions in a population: Mutualism and Competition.

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