

Organisms and Populations — CBSE Pattern Test 2

Class 12 Biology · 90 minutes · 40 marks · Sections A–D with answer key · Narayan Gurukul Academy

Test 2 — CBSE Pattern (90 minutes, 40 marks)

Class 12 Biology · Organisms and Populations · Narayan Gurukul Academy (ClassApna)

General Instructions: (1) This paper has four sections — Section A (1×10), Section B (2×4), Section C (3×4) and Section D (5×2) — total 40 marks. Time allowed: 90 minutes.
(2) All questions are compulsory. No overall choice is given; internal choice, where allowed, is clearly marked.
(3) For MCQ questions choose the single correct option; for VSA answers write a single line.
(4) Take $g = 10 \text{ m/s}^2$. All symbols carry their usual meaning. Use of a calculator is not permitted.

Section A — MCQ & VSA ($10 \times 1 = 10$ marks)

1. Summer dormancy in animals is called
 - (A) aestivation
 - (B) hibernation
 - (C) diapause
 - (D) migration
2. In commensalism, one species benefits and the other is
 - (A) unaffected
 - (B) harmed
 - (C) also benefited
 - (D) killed
3. The exponential growth equation is
 - (A) $\frac{dN}{dt} = rN$
 - (B) $\frac{dN}{dt} = N/K$
 - (C) $\frac{dN}{dt} = r$
 - (D) $\frac{dN}{dt} = K$
4. Gause's competitive exclusion principle concerns
 - (A) competition
 - (B) mutualism
 - (C) parasitism
 - (D) predation
5. Diapause is a period of
 - (A) suspended development
 - (B) active growth
 - (C) reproduction
 - (D) migration
6. The presence of blubber in polar animals helps in
 - (A) insulation
 - (B) digestion
 - (C) respiration
 - (D) excretion
7. The environment of an organism includes
 - (A) biotic and abiotic factors

- (B) only biotic
 - (C) only abiotic
 - (D) only temperature
8. In logistic growth, growth is
- (A) limited by resources
 - (B) unlimited
 - (C) constant
 - (D) zero
9. What is a habitat?
10. Define mutualism.

Section B — Short Answer I ($4 \times 2 = 8$ marks)

11. Why is temperature important?
12. Give one example of predation.
13. What is mortality?
14. Give one adaptation of a camel.

Section C — Short Answer II ($4 \times 3 = 12$ marks)

15. Describe the major abiotic factors that affect organisms.
16. Explain the concept of an ecological niche.
17. Describe the adaptations of desert plants and animals.
18. Describe how resources limit population growth.

Section D — Long Answers ($2 \times 5 = 10$ marks)

19. (a) Differentiate between conformers and regulators. (b) Describe the major population interactions with examples.
20. (a) Describe population growth models. (b) Explain competition and how organisms avoid it.

Answer Key (Marking Scheme)

- Q1 — (A) aestivation. Q2 — (A) unaffected. Q3 — (A) $dN/dt = rN$. Q4 — (A) competition. Q5 — (A) suspended development. Q6 — (A) insulation. Q7 — (A) biotic and abiotic factors. Q8 — (A) limited by resources.
- Q9 — The physical place where an organism lives.
- Q10 — Mutualism is a $+/+$ interaction benefiting both species.
- Q11 — It is the most important abiotic factor controlling the distribution of organisms.
- Q12 — A tiger killing and eating a deer.
- Q13 — Mortality is the death rate.
- Q14 — A camel stores fat in its hump (and conserves water).
- Q15 — Temperature, water, light and soil.
- Q16 — It is the functional role and position of a species in its ecosystem.
- Q17 — Desert plants reduce water loss; desert animals conserve water and tolerate heat.
- Q18 — As N approaches K , growth slows until it stops at carrying capacity.

Q19 — (a) Regulators maintain a constant internal state; conformers change with the environment. (b) Mutualism, commensalism, predation, parasitism, competition.

Q20 — (a) Exponential and logistic. (b) Competition is –/–; organisms avoid it by resource partitioning.