

ORGANISM AND POPULATION

1. What is **wrong** about xerophytes?

- 1) Sunken stomata
- 2) Small spiny leaves
- 3) thick cuticle
- 4) Large number of stomata

Ans: 4

2. Animal that can tolerate wide range of salinity are called

- 1) stenohaline
- 2) euryhaline
- 3) anadromous
- 4) catadromous

Ans: 2

3. Competition for food, light and space is most severe between two

- 1) closely related species growing in the same area
- 2) closely related species growing in different habitats
- 3) distantly related species growing in the different habitats.
- 4) Distantly related species growing in different habitats.

Ans:1

4. Carrying capacity of environment is determined by

- 1) birth rate
- 2) death rate
- 3) limiting resources
- 4) population growth

Ans:3

5. If there is a large gap between birth rate and death rate in Haryana, we can infer that Haryana would tend to have

- 1) more of old men
- 2) Low rate of fertility
- 3) More school going children
- 4) low dependency ratio.

Ans:1

6. What is the most important factor for the success of an animals population?

- 1) natality
- 2) unlimited food
- 3) adaptabiliy
- 4) inter specific activity

Ans:3

7. If in a population, rate of addition of new members is higher than the rate of loss of individuals, the graph prepared shows.

- 1) declined growth
- 2) exponential growth
- 3) zero population growth
- 4) none of these

Ans:2

8. The association between Rhizobium and roots of leguminous plants is

17. A successful parasite is one which
- 1) grows rapidly
 - 2) reproduces fast
 - 3) Sticks to host for long
 - 4) makes minimum demand from the host.

Ans:4

18. Type of interaction between predation and parasitism are
- 1) +,+
 - 2) -,-
 - 3) +, 0
 - 4) +, -

Ans:4

19. At asymptom stage, population is
- 1) decreasing
 - 2) stabilized
 - 3) increasing
 - 4) changing

Ans:2

20. Population dynamics is related to
- 1) increase in population
 - 2) decrease in population
 - 3) change in population
 - 4) All the above

Ans:3

21. Natality is characteristic of a population which means.
- 1) The total number of individuals present per unit area at a given time.
 - 2) The increase in number of individuals in a population under given environmental condition.
 - 3) Loss of individuals due to death in a population under given environmental conditions.
 - 4) The movement of individuals into and out of population.
 - 5) Each population has three different age groups.

Ans:2

22. The formula for exponential growth is
- 1) $dt/dN=dt$
 - 2) $rN/dN=dt$
 - 3) $rN/dN =dt$
 - 4) $dN/dt =rN$

Ans:4

23. Consider the following four statements (i-v) about certain desert animals such as Kangaroo rat.
- i) They have dark colour and high rate of reproduction and excrete solid urine.
 - ii) They do not drink water, breath at a slow rate to conserve water and have their body covered with thick hairs.
 - iii) They feed on dry seeds and do not require drinking water
 - iv) They excrete very concentrated urine and do not use water to regulate body temperature which two of the above statements for such animals are true?
- 1) i) and ii)
 - 2) iii) & iv)
 - 3) ii) and iii)
 - 4) iii) and i)

Ans:2

24. Reduction in vascular tissue, mechanical tissue and cuticle is characteristic of
1) Xerophytes 2) mesophytes 3) epiphytes 4) hydrophytes.

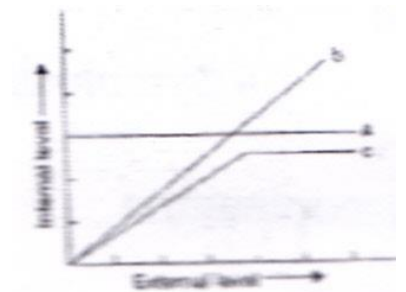
Ans:4

25. Niche is defined as the
1) Position of species in a community in relation to other species
2) place where organism live
3) lace where organism lives and performs its duty
4) place where population perform their duties

Ans: 4

26. The figure given below is a diagrammatic representation of response of organisms to abiotic factors. What do a, b and c represent respectively.

a	b	c
1) Partial regulator	Regulator	Conformer
2) Regulator	Conformer	Partial regulator
3) Confirmer	Regulator	Partial regulator
4) Regulator	Partial regulator	Conformer.



Ans:3

27. Which one of the following is most appropriately defined?
1) Parasite is an organism which always lives inside the body of other organism and may kill it.
2) Host is an organism which provides food to another organism.
3) Amensalism is a relationship in which one species is benefited whereas the other is unaffected.
4) Predator is an organism that catches and kills other organism for food.

Ans:4

28. Which one of the following is a xerophytes plant in which stem is modified into a flat, green and succulent structure?

- 1) Acacia 2) Opuntia 3) Casuarina 4) Hydrilla

Ans:2

29. A large regional unit characterized by a major vegetation type and associated fauna found in a specific climate zone constitutes.

- 1) ecosystem 2) biological community 3) biome 4) habitat

Ans: 3

30. Who is considered as the 'Father of Ecology' in India?

- 1) Ramdeo Misra 2) M.S. Swaminathan 3) P. Maheshwari 4) S.L. Mehta

Ans:1

31. Which one of the following is categorized as a parasite in true sense?

- 1) the Cuckoo (Koel) lays its eggs in crow's nest.
- 2) the female Anopheles bites and sucks blood from humans
- 3) Human foetus developing inside the uterus drawn nourishment from the mother
- 4) Head louse living on the human scalp as well as laying eggs on human hair.

Ans:4

32. Consider the following four conditions (1-4) and select the correct pairs of them as adaptation to environment in desert lizards.

- 1) burrowing in soil to escape high temperature
- 2) losing heat rapidly from the body during high temperature.
- 3) bask in sun when temperature is low
- 4) insulating body due to thick fatty dermis.

Option:

- 1) 1,2 2) 3,4 3) 1, 3 4) 2, 4

Ans: 3

33. The logistic population growth, is expressed by the equation.

1) $dN/dt = rN$ 2) $dN/dt = rN \left(\frac{N-k}{N} \right)$ 3) $dt/dN = Nr \left(\frac{k-N}{k} \right)$ 4) $dN/dt = rN \left(\frac{k-N}{k} \right)$

Ans:4

34. Consider the following statement (A-D) each with one or two blanks

- A) Bears go into ___(1) ___ during winter to ___2___ cold weather
- B) A conical age pyramid with a broad base represents ___(3) ___ human population.
- C) A wasp pollinating a figure flower is an example of ___ (4) ___
- D) An area with high level of species richness is known as ___(5) ___

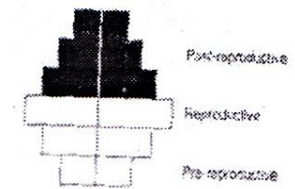
Which one of the following options, gives the correct fill ups for the respective blank numbers from (1) to (5) in the statements?

- 1) (3) –expanding (4)-commensalism (5)- biodiversity park
- 2) (1) hibernation(2) escape (3) expanding (5)-hot spot
- 3) (3) –stable, (4) –commensalism (5) marsh
- 4) (1) aestivation (2) –escape(3) escape (3) stable (4) mutualism

Ans:2

35. What type of human population is represented by the following age pyramid?

- 1) expanding population
- 2) vanishing population
- 3) Stable population
- 4) declining population.



Ans:4

36. A. population growing in a habitat with limited resources show four phase of growth in the following sequence.

- 1) acceleration-declaration-lag phase-asymptote
- 2) asymptote- acceleration- declaration lag phase.
- 3) lag phase-acceleration-declaration asymptote
- 4) acceleration- lag phase-declaration-asymptote.

Ans: 3

37. Resemblance of an organism to another for protection and hiding is

- 1) Mimicry
- 2) Predation
- 3) Adaptation
- 4) Camouflage

Ans: 1

38. The basic unit of study in ecology is

- 1) population
- 2) organism
- 3) community
- 4) species.

Ans:2

39. People who have migrated from the plains to an area adjoining Rohtang Pass about six months back

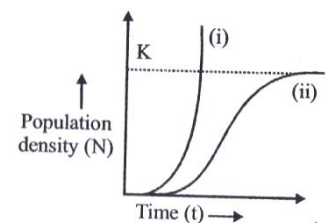
- 1) have more RBCs and their haemoglobin has a lower binding affinity to O₂
- 2) Are not physically fit to play games like football.
- 3) Suffer from altitude sickness with symptoms like nausea fatigue etc.
- 4) have the usual RBC count but their haemoglobin has very high binding affinity to O₂

Ans:1

40. Study the population growth curves shown in the above diagram.

Which options is the best for curve (i) and (ii)?

- | Sl. No. | Type of (i) Curve | Type of ii curve |
|---------|-------------------|-------------------|
| 1 | Logistic Curve | Exponential curve |
| 2. | Exponential curve | Logistic curve |
| 3. | Logistic curve | Exponential curve |
| 4. | Exponential curve | Logistic curve. |

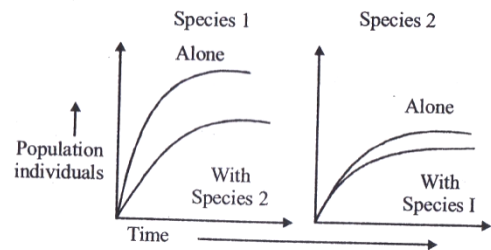


Ans:2

41. In laboratory experiments, two species of the protist Paramecium were grown alone and in the presence of the other species. The following graphs show growth of species 1 (left) and species 2 (right), both along and when in mixed culture.

Interpretation of these graphs shows that

- 1) competitive exclusion occurred in the these experiments.
- 2) Both species are affected by interspecific competition but species 1 is affect less.
- 3) Both species are affected by interspecific competition but species 2 is affected less.
- 4) Both species are affected equally by interspecific competition.



Ans:3

42. If 4 individuals in a laboratory population of 40 fruit flies died during a specified time interval (i.e. a week), the death rate in the population during that period is
- 1) 1
 - 2) 0.1
 - 3) 0.01
 - 4) 0.4

Ans:2

43. The age structure of a population influences population growth because
- 1) younger females have more offsprings than do older females.
 - 2) Different age groups have different reproductive capabilities.
 - 3) The more individuals that are immature the slower the population will grow.
 - 4) A shorter generation time results in slower population growth.

Ans:2

44. If N is the population density at time t , then its density at time $t+1$ is
- 1) $N_{t+1} = N_t + [B+1)+(D+E)]$
 - 2) $N_{t+1} = N_t - [B+1)+(D+E)]$
 - 3) $N_{t+1} = N_t + [B+1)-(D+E)]$
 - 4) $N_{t+1} = N_t - [B+1)-(D+E)]$

Ans:3

45. The integral form of the exponential growth equation
- 1) $N_t = N_0 e^{rt}$
 - 2) $N_0 = N_t e^{rt}$
 - 3) $N_t = N_0 r^{et}$
 - 4) $rN = N_t e^{rt}$

Ans:1

46. Assume that you have been studying a population of cattails at the edge of a pond. After 10 years of observations, you notice that the population has remained steady. What is the most likely explanation?
- 1) The birth rate and death rate are both increasing at the same rate.
 - 2) The pond is drying up.
 - 3) The carrying capacity of pond has been reached.
 - 4) Nutrients levels in pond are fluctuating.

Ans:3

47. When certain exotic species are introduced into geographical area, they become invasive and start spreading fast because

- 1) They have high reproductive rate.
- 2) They produce chemicals to inhibit the growth of other organisms.
- 3) There is no competition.
- 4) The invaded land does not have its natural predators.

Ans:4

48. Which of the following adaptation do not lessen the impact of predation?

- 1) Some species of insects and frogs are camouflaged.
- 2) Some animals are poisonous.
- 3) Monarch butterfly is highly distasteful due to having certain chemical in their bodies.
- 4) Different feeding habits of finches.

Ans:4

49. Mac Arthur observed that five closely related species of Warblers living on the same tree were able to avoid competition and co-exist due to

- 1) cooperation in their foraging efforts
- 2) Behavioral differences in their foraging activities.
- 3) Different kinds of insects they eat.
- 4) All of these.

Ans:2

50. The Abingdon tortoise in Galapagos Islands became extinct within a decade after goats were introduced on the island, apparently due to

- 1) Lower intrinsic rate of goat.
- 2) The greater browsing efficiency of the goats.
- 3) Limiting resource
- 4) Superiority of the goat.

Ans:2