

JUN-2021

1. Select the correct statement related to phylogeny of primates.
 - a. Lemurs are more closely related to lorises than to gibbons.
 - b. Orangutans are closer to lorises than to gibbons
 - c. Tarsiers are the same as old world monkeys.
 - d. Humans are closer to new world monkeys than to orangutans

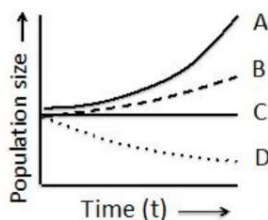
2. Consider the following ecosystems.

- A. Tropical rain forests
- B. Open ocean
- C. Algal beds and Coral reefs
- D. Marshes and Swamps

Which one of the following options represents these ecosystems in an increasing order of their contribution to annual world net primary production?

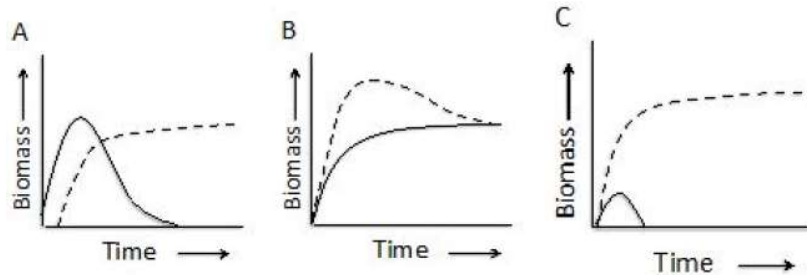
- a. B, C, D and A,
- b. C, D, B and A
- c. D, C, A and B
- d. C, D, A and B

3. Which among the four populations (A, B, C, and D) would have the lowest intrinsic rate of population growth (r)?



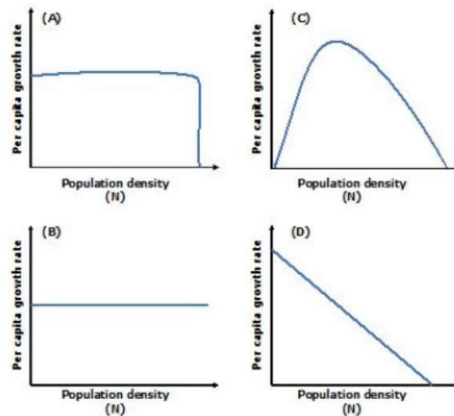
- a. A
 - b. B
 - c. C
 - d. D
4. Mimicry where deceptiveness of the mimic's signal is high and fitness consequences signaled to the receiver by the mimic is also high (and negative) is
 - a. Batesian mimicry
 - b. Mullerian mimicry
 - c. Fisherian mimicry
 - d. Millerian mimicry
 5. Consider the following four geological periods.

- a. Quaternary
 - b. Cretaceous
 - c. Jurassic
 - d. Cambrian
6. Which one of the following options represents the correct arrangement of these geological periods from earliest to recent:
 - a. A-B-D-C,
 - b. D-C-B-A,
 - c. C-B-D-A,
 - d. B-A-C-D,
7. Given below are statements on 'living fossils'. Select the correct statements
 - a. Living fossils are impressions of extant organisms in old rocks.
 - b. Living fossils show high morphological divergence from fossil records.
 - c. Living fossils are always an evolutionary link between two classes of organisms
 - d. Living fossils are organisms that have remained unchanged for millions of years.
8. The graphs given below show the possible behavior of two species over the course of succession.



Possible effects observed during succession are:

- I. Total suppression
 - II. ii. Convergence
 - III. iii. Sequential succession
- a. A-(i) B-(ii) C-(iii)
 - b. A-(ii) B-(iii) C-(i)
 - c. A-(iii) B-(ii) C-(i)
 - d. A-(iii) B-(i) C-(ii)
9. Consider the following graphs for per capita growth rate ($1/N$) (dn/dt) as a function of dt population density (N).



- A
- B
- C
- D

10. The tables below show the bird species and their abundance in three habitats P, Q and R.

Habitat P		Habitat Q		Habitat R	
Species identity	Abundance	Species identity	Abundance	Species identity	Abundance
1	120	1	20	1	80
2	20	2	20	2	25
3	5	3	20	3	15
4	1	4	20	4	10
5	1	5	20	5	5
		6	15	6	3
		7	15	7	3
		8	15	8	3

Which one of the combinations below better represents the habitats in decreasing order a diversity?

- P, R, Q
- R, Q, P
- R, P, Q
- Q, R, P

11. In a population that is in Hardy-Weinberg equilibrium, the frequency of the recessive homozygote genotype of trait q is 0.04. The percentage of individuals homozygous for the dominant allele is.

- 64
- 40
- 32
- 16