DPP
DAILY PRACTICE PROBLEMS

Class : XIIth
Date :

Solutions

Subject : BIOLOGY
DPP No. : 6

Topic :- Organisms & Popoulations

1 **(c)**
Zero growth of population indicated when various age groups are evenly balanced.
Age pyramid Graphic representation of different age groups found in a population with pre-reproductive group at the base. Reproductive ones in the middle and post-reproductive group at the top is called age pyramid.
Age pyramid have three kinds
(i) **Triangular Age Pyramid** The number of pre-reproductive is very large. Number of reproductive individual is moderate and post-reproductive are fewer. Population size is growing
(ii) **Bell-shaped Age Pyramid** The number of prereproductive and reproductive individuals is almost equal. Post-reproductive individuals are comparatively fewer. Population size is stable
(iii) **Urn-shaped Age Pyramid** Proportion of reproductive age group is higher than the individuals in pre-reproductive age group. Number of post-reproductive individuals is also sizable. It is declining population with negative growth

2 **(a)**
Allen's Rule According to Allen's rule, in endothermal animals of colder areas, the extremities like feet, tail, ears, etc. tend to get smaller as compared to their relatives in warmer region due to minimise the surface volume ratio so that the heat loss could be minimize

3 **(c)**
Rain or precipitation is the source of water over land. Therefore, it determines the vegetation of an

area. The productivity and distribution of land plants dependant on availability of water

4   **(d)**

An abiotic factor relating to the physical or chemical composition of the soil found in a particular area is called edaphic factor , while temperature , light and water precipitation (rainfall) are climatic factors.

5   **(a)**

Populations means a group or assemblage of organisms of the same species live at a given time in a given time in a particular area. Population growth can be determined by the number of individuals added to the population. The addition of individuals may take place through natality (by birth) or through immigration (i.e. entry of individual from outside). The human population of India increased in 20th century by **natality**.

6   **(d)**

Population density means the number of individuals of a species per unit area or volume. Space or area for terrestrial habitat is measured in two dimensions (m^2) while for aquatic habitats, it is measured in three dimensions (m^3).

7   **(c)**

As we can see from graph 1 that there is more gap between lines of species 1 and 2 than the graph 2. So it is clearly interference out that both species are affected by interspecific competition but species two is less affected

8   **(d)**

The housefly which has a short life span and produces a large number of eggs could be considered as 'r' selected species
Depend upon the giving birth their are two type of species

'*r*' *selected species* organism of this type give more young ones during their life cycle. Parent care their children less and their size are also little

'*K*' **Selected Species** Organisms of this kind gives less birth during their life cycle. They care more their children. Their size and life span are more

than r selected species, *e.g.*, man, mammal, bird, etc.

9 **(b)**

The environmental check on biotic potential is called **environmental resistance.**

Biotic potential – overall reproductive output.

Fecundity – reproductive output, usually of an individual.

10 **(c)**

In the interference competition two species interfere in each other's natural resources for living hood. Naturally they effect on each other's intrinsic growth rate (r). The volume of 'r' *is low significantly in interference competition*

11 **(d)**

Sexual parasite is type of parasitism in which a parasite live on the particular sex of the organism An angler fish (*Photocorynus*) male lives as a small parasite over the head of the female. In *Bonellia* the male is an internal parasite while in *Schistosoma* male lives in gynecophoral canal of the female

12 **(d)**

A-99%, B-Changes, C-Changes

13 **(b)**

The good soil is that which allows percolating the water slowly from it, e.g., alluvial soil (i.e., soil carried by water).

14 **(c)**

A **population** is group of individuals of a species (same species) growing in a given area (same habitat).

15 **(d)**

The size of a population for any species are not a static parameter. It keeps changing in time depending on various factors including food availability, predation pressure and adverse weather, water, space, accumulated waste, etc.

16 **(a)**

Population size The size of a population depends upon several factors like mortality, natality, etc. The size in nature could be as low as less than 10 (Siberian cranes at Bharatpur wetlands in any

year) or go in million (*Chlamydomonas* in a pond).

Population size, more technically called population density (designated as N) need not necessarily be measured in numbers only. Although the total number is the most appropriate measure of population density. But in some cases in is different to determine

For example

In a forest area suppose there are 200 *Parthenium* plants but only a single banyan tree will huge canopy

The following inference could be made

(i) Population density of banyan is low

(ii) Population cover area of banyan to high

In this example percentage of cover of biomass is more meaningful than population size

17 **(b)**

'N is the population density of time t then its density at time $t + 1$ is

$$Nt + 1 = Nt + [(B + I) - (D + E)]$$

We can see from the above equation that population density increases if the number of birth plus number of immigrants $(B + I)$ is more than the number of death plus the number of emigrants $(D + E)$

18 **(b)**

Animals of colder areas possess thick fur, subcutaneous fat and small extremities so that they can tolerate very low temperature (below 0°C)

19 **(c)**

Organisms, populations, communities, biomes. Ecology is basically concerned with four levels of biological organisation. *They are*

(i) organisms   (ii) populations

(iii) communities   (iv) biomes

20 **(b)**

As the isolated populations do not have any hereditary diseases like colourblindness, so, they do not spread accordingly.

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	C	A	C	D	A	D	C	D	B	C
Q.	11	12	13	14	15	16	17	18	19	20
A.	D	D	B	C	D	A	B	B	C	B