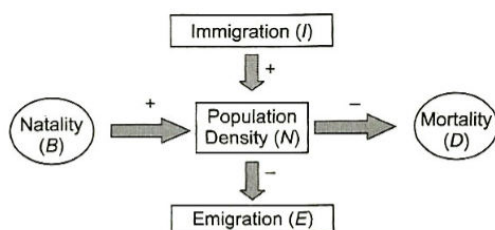


Topic :- Organisms & Popoulations

- 1 (c)
A-Increases, B-Increases, C-Decreases, D-
Decreases



(-) Sign indicates factors decreasing population density

(+) Sign indicates factors increasing population density

- 2 (d)
As we can see clearly in the given diagram that the growth of the population is unlimited and increasing. That is the distinguish feature of exponential growth model or curve. As it has the J-shaped appearance so, it is also called J-shaped curve

- 3 (d)
A wide variety of chemical substances that we extract from plants on a commercial scale (nicotine, caffeine, quinine, strychnine, opium etc); are produced by them actually as defences against grazers and browsers

- 4 (c)
Chapman (1928) proposed the term 'biotic potential' to defined maximum reproductive power. He defined it as the inherent power of a population or organism to survive or increase in number under optimal environmental conditions is called **biotic potential**.

- 5 (a)

Stenothermal organisms are those organism, which live with in narrow range of temperature because of their requirement of nearly constant temperature through out the year, *e.g.*, polar bear, lizards, amphibians, coconut (warm tropical areas)

- 6 **(b)**
In Orchids (*Ophrys*), there is strange relationship with pollinator insects. The Mediterranean Orchid (*Ophrys*) employs sexual deceit to get pollination done by a species of bee. One petal of its flower bears an uncanny resemblance to the female of the bee in size, colour and markings. The male bee is attracted to what it perceives as a female. Pseudocopulates with the flower and in that process pollinates the flower
- 7 **(a)**
The age pyramid is a model representing geometrically the proportion of different age group in the population of any organism. A pyramid with broad base indicates a high percentage of young individuals. An unshaped age pyramid indicates a low percentage of young individuals.
- 8 **(c)**
A high density of tiger population in an area can result in intraspecific competition.
- 9 **(b)**
An age pyramid is a graphic representation of proportion of various age groups of a population with pre-reproductive at the base, reproductive in the middle and post reproductive at the top. For human population, the age pyramids show age distribution of males and females in a combined diagram. The shape of the age pyramids reflects the growth status of the population. In a declining population the shape of pyramid is urn-shaped.
- 10 **(b)**
A horizon It is the upper most horizon of the soil, which is also called the top soil. This horizon contains mineral matter mixed with humus
- 11 **(a)**
(i) Natality and immigration both increases the

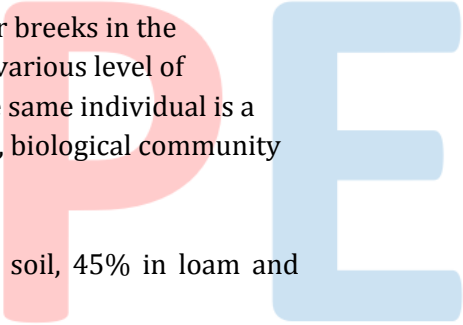
- population density
(ii) Mortality and emigration both decreases the population density
- 12 **(c)**
Stenohaline (shark and string rays) and euryhaline (salmon).
Some organisms are tolerant to wide range of salinities called euryhaline, *e.g.*, salmon fish but others are restricted to narrow range called stenohaline like shark and string rays. Many freshwater animals cannot live for long in sea water and *vice-versa* because of the osmotic problems they would face
- 13 **(a)**
The plants developing in dry habitat are called xerophytes. It is difficult to decide whether a xerophytes is really xerophilous and occur only in dry habitats or deserts or is merely drought-resistant. The xerophytes have well developed root-system, stunted, woody, hard stem and reduced leaves.
- 14 **(a)**
Natality It refers to the number of birth during given period in a population that are added to the initial density. It increases the population density
- 15 **(b)**
Land of selection operates on the population level.
Population It is a grouping of similar individuals in a particular geographical area or space. The different populations of the same organism present in particular geographical areas are called local population/demes. Selection operates only at the population level. A local population adapted genetically to its particular environment is called ecotype
- 16 **(b)**
Mutualism is called (+) and (+) interaction, where both partners are benefitted.
- 17 **(d)**
In the stationary phase of logistic growth $K = N$ than the population growth becomes zero
In exponential phase when $b = d$ or r (increase rate) = 0 then population increase becomes zero

(stable)

18 **(a)**
No predator become proficient in acquiring prey because prey population also evolve anti predatory traits to protect themselves

19 **(c)**
Organisation is the arrangement and coordination of small components into larger components in a hierarchy, where each level is formed of components of lower level and itself becomes constituent of still higher level
Hierarchy in an organisation from the level of biomolecules to organismic level is called biological hierarchy or biological organisation.
The hierarchy in the levels of organisation connected with ecological grouping of organism is called ecological hierarchy or ecological level of organisation
There are no sharp lines or breaks in the functional sense amongst various levels of ecological hierarchy as the same individual is a component of population, biological community as well as ecosystem

20 **(a)**
Porosity is 30% in sandy soil, 45% in loam and 50% in clay soil.



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