



Blue Print (As per PU Board)

Topic	1 mark questions	2 marks questions	3 marks questions	5 marks questions	Total Marks
Organism & Population	3	2	-	3	22

**One mark questions**

- State Gauss’s competitive exclusion principle.**  
 Answer: Two closely related species competing for the same resources cannot co-exist indefinitely and the competitively inferior one will be eventually eliminated
- What is ammensalism?**  
 Answer: Biological interaction between two different species, in which one species is harmed while the other is neither benefited nor harmed.
- People living at high altitudes have high haemoglobin content. Give reason.**  
 Answer: Body produces more red blood cells, as a physiological adaptation to compensate oxygen loss at high altitudes.

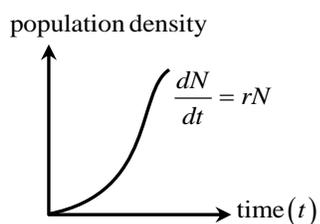
**Two marks questions**

- Write a note on brood parasitism:**  
 Answer: Brood parasitism in birds is fascinating example of parasitism in which the parasitic bird lays its eggs in the nest of its host and lets the host incubate them  
 During the course of evolution, the eggs of the parasitic bird have evolved to resemble the hosts egg in size and color to reduce the chances of the hostbird detecting the foreign eggs and ejecting them from the nest.
- What is age pyramid? What does it reflects?**  
 Answer: It is the graphical representation of population of an area at a given time, in which percentage of individuals of an age group is plotted for population.  
 It shows whether the populations is growing or stable or decreasing.
- Write a note on conformers**  
 Answer: Majority (99%) of animals and plants cannot maintain a constant internal environment and hence their body temperature varies according a ambient -temperature.  
 In aquatic animals the osmotic concentration of body fluid varies with ambient water osmotic concentration. Such animals and plants are simply called conformers.

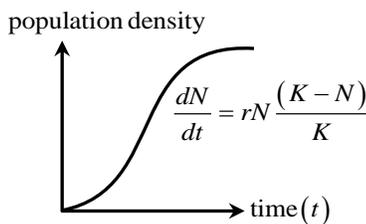
**Three marks questions**

- Graphically represent-the exponential growth and logistic growth curve with the equation**

Answer:



Exponential growth curve



Logistic growth curve

(1.5mark)

- What are ectoparasites? Give any four examples for ectoparasite.**

Answer: Ectoparasite are those organism that feed on the external surface of the lost.

(1 mark)

- Lice on human
- Ticks on dog
- Marine fish infested with copepods



- (d) Cuscutra, a parasitic plant that grow on hedge plants
9. **Orchid flower, ophrys employs to maintain resemblance of its petal to female bee. Explain how and why does it do so?**

Answer: Ophrys employs sexual deceit

- (i) One petal bears uncanny resemblance to female of the bee.
- (ii) Male bee is attracted to what –it perceives as a female ‘pseudocopulates; during which pollen dusted on male bees body.
- (iii) Ophrys does so because pollination success will be reduced unless it co-evolves with female bee.

#### Five marks questions

10. **What is meant by population growth? List the attributes that populations but not individual possess.**

Answer: Population growth is the change in a population over time and can be quantified as the change in the number of individuals of any species in a population using “per unit time” for measurement. (1 mark)

The main attributes are

- (i) Birth rate (Natality) (1 mark)  
It refers to the number of individuals added to the populations with respect to the member of the population
- (i) Death rate (mortality) : It refer to the loss of individuals with respect to the member of a population (1 mark)
- (ii) Sex ratio: It is the number of males and females per thousand individuals (1 mark)
- Age distribution: It refer to the percentage of individuals of different ages in a given population

11. **Define the following terms and give one example for each**

- (a) Commensalism (1 mark)
- (b) Parasitism (1 mark)
- (c) Camouflage (1 mark)
- (d) Mutualism (1 mark)
- (e) Interspecific competition (1 mark)

Answer:

- (a) Commensalism: A form of symbiosis between two organism of different species in which one of them benefits from the association whereas the other is largely unaffected or not significantly harmed or benefiting from the relationship.

Eg: Symbolism between the epiphyte orchids on branches of mango trees

- (b) Parasitism: It is a relationship between organisms of different species where one organism the parasite is benefited at the expenses of the other host

Eg: Parasitism include interactions between vertebrate hosts and diverse animals such as tapeworms, flukes

- (c) Camouflage: It is an adaptation helping both prey and predators from being detected. Many species of frogs and insects blend with their surroundings to escape from predators

- (d) Mutualism: It is an interaction between two different organism of different species such that both individuals are benefited

Eg: Pollination is a classic example

- (e) Interspecific competition: Competition is not always a straightforward, direct-interaction ether and can occur in both direct and indirect fashion

Eg: Competition for zooplankton between fishes in water and water birds like flemingoes

12. **Explain different-adaptions of plants and animal for dry conditions.**

Answer: Kangaroo rate meets their water requirement from oxidation of fat and excrete very concentrate urine to conserve water

Answer:

- (a) Plants in desert (xerophytes)
- (b) Thick cuticle on their leaf surfaces sunken stomata both to reduce transpiration



- (c) Which have special photosynthetic pathway (CAM) stomata closed during day time and remain open during night
- (d) Opuntia has no- leaf they are reduced to spines
- (e) Photosynthesis takes place in flat green plants