**THE SCHRAM ACADEMY**

**Worksheet - 3**

**Ch – 13: ORGANISMS AND POPULATIONS**

**CLASS XII BIOLOGY**

**INSTRUCTIONS:**

1. Students are asked to read chapter 16 from NCERT Textbook.
2. Watch the given video.

<https://www.youtube.com/watch?v=L68S1t9XVgE>

1. Answer the given questions in your Class work or in A4 sheet neatly.

1. Name a photoperiod dependent process, 1 each in plants and animals.

2. Why do predators avoid eating monarch butterfly?

3. How does the butterfly develop dis-protective feature?

4. State Gauss’s competitive exclusion principle.

5. What is Allen’s rule?

6. What do phytophagous insects feed on?

7. Name the special type of tissue enabling plants like lotus and water hyacinth to

survive in aquatic environment. Mention any 2 specific functions of this tissue.

8. How does a cactus adapt to survive its habitat?

9. Explain Verhulst pearl logistic growth of population

10. Name the type of interaction seen in the following examples

A. Ascaris worms living in the intestine of humans.

B. Wasp pollinating fig inflorescence.

C. Clown fish living among the tentacles living among sea anemone

D. Mycorrhizae living on the roots of higher plants

E. Orchid growing on a branch of a mango tree

F. Disappearance of smaller barnacles when *Balanus* dominated in the coast of

Scotland.

G. Ticks live on the skin of dogs.

H. Sea anemone is often found on the shell of hermit crab.

I. Koel laying its eggs in crow’s nest.

11. A. List the biotic components an organism interacts with in its natural habitat.

B. Mention how organisms have optimized their survival and reproduction in

a habitat.

12. Draw and explain a logistic curve for a population of density (N) at time (t) whose

intrinsic rate of natural increase is (r) and carrying capacity is (k).

13. A. Explain with the help of a graph the population growth curve when resources are (i) limiting and (ii) not limiting.

B. “Nature has a carrying capacity for a species.” Explain.

14. Why small animals are rarely found in the polar regions? Explain.

15 Bear hibernates whereas some species of zooplanktons enter diapause to avoid

stressful external conditions. How are these two ways different from each other?

16. How do plants benefit from having mycorrhizal symbiotic association?

17. A. How is *Cuscuta* adapted to be a parasitic plant?

B. Why do cattle avoid browsing on *Calotropis* plants? Explain.

18. Refer figure 13.5 page 230 and answer the following:

A. Identify the growth curves ‘a’ and ‘b’.

B. Which one of them is considered a more realistic one and why?

C. If is the equation of the logistic growth curve, what does K stand for?

D. What is symbolized by N?

19. Draw the three different age pyramids for human population and which pyramid is

ideal for human population and why?

20. What do you mean by the terms: ectotherms, euryhaline, stenohaline, eurythermal?