	INDIAN SCHOOL AL WADI AL KABIR	
Class: XII	**Department: SCIENCE 2020 – 2021** **SUBJECT : BIOLOGY**	**Date of submission:** **16.04.2020**
Worksheet No: 02	**UNIT: ECOLOGY** **Chapter: ECOSYSTEM**	**Note:** **A4 FILE FORMAT**
NAME OF THE STUDENT	**CLASS & SEC:**	**ROLL NO.**

MULTIPLE CHOICE QUESTIONS

1. Approximately how much of the solar energy that falls on the leaves of a plant is converted to chemical energy by photosynthesis?

a. Less than 1% b. 2-10% c. 30% d. 50%

2. Which of the following is not a producer?

a. *Spirogyra* b. *Agaricus* c. *Volvox* d. *Nostoc*

3. Productivity is the rate of production of biomass, expressed in terms of:

i. (kcal m^{-3}) yr^{-1}
ii. g^{-2} yr^{-1}
iii. g^{-1} yr^{-1}
iv. (kcal m^{-2}) yr^{-1}

a. ii b. iii c. ii and iv d. i and iii

4. The process of mineralisation by microorganisms helps in the release of:

a. inorganic nutrients from humus

b. both organic and inorganic nutrients from detritus

c. organic nutrients from humus

d. inorganic nutrients from detritus and formation of humus.

5. An inverted pyramid of biomass can be found in which ecosystem?

a. Forest b. Marine c. Grass land d. Tundra

6. Which of the following ecosystems is most productive in terms of net primary production?

a. Deserts

b. Tropical rain forests

c. Oceans

d. Estuaries

7. Among the following, where do you think the process of decomposition would be the fastest?

a. Tropical rain forest

b. Antarctic

c. Dry arid region

d. Alpine region

8. The sequence of communities of primary succession in water is:

a. Phytoplankton, sedges, free-floating hydrophytes, rooted hydrophytes, grasses and trees.

b. Phytoplankton, free-floating hydrophytes, rooted hydrophytes, sedges, grasses and trees.

c. Free-floating hydrophytes, sedges, phytoplankton, rooted hydrophytes, grasses and trees.

d. Phytoplankton, rooted submerged hydrophytes, floating hydrophytes, reed swamp, sedges, meadow and trees.

9. If the carbon atoms fixed by producers already have passed through three species, the trophic level of the last species would be.

a. scavenger

b. tertiary producer

c. tertiary consumer

d. secondary consumer

10. Edaphic factor refers to:

a. Water

b. Soil

c. Relative humidity

d. Altitude

TWO MARK QUESTIONS

11. Expand PAR, How much PAR is used in gross primary productivity?

12. Give an account of energy flow in an ecosystem.

13. Give account of factors affecting the rate of decomposition.
14. Why is the length of a food chain in an ecosystem generally limited to 3-4 trophic levels?
15. Which ecosystem has maximum stratification? Justify.
16. Construct a grazing food chain and detritus food chain using the following with five links each:
    (Earth worm, bird, snake, vulture, grass, grasshopper, frog, decaying plant matter)

THREE MARK QUESTIONS

17. What are ecological pyramids? Mention its limitations
18. Briefly describe the process of decomposition
19. What is xerosere? Describe the process of succession on a bare rock
20. Construct a pyramid of biomass starting with phytoplankton. Label 3 trophic levels. Is the pyramid upright or inverted? Why?
21. What does the term standing state of soil signify? How are the nutrients recycled in the ecosystem? Write a cyclic account of carbon movement in nature.
22. Why nutrient cycle is known as biogeochemical cycle? Name the two different nutrient cycles. Distinguish between them.

FIVE MARK QUESTIONS

23. Explain how xerarch succession progresses from xeric to mesic condition and forms a stable climax community.
24. (a) Comment on the pattern in which all communities undergo a change in the composition and structure with changing environmental conditions
    (b) Explain ‘climax community’ and ‘sere’.
    (c) Differentiate between primary and secondary succession with examples.
25. (a)Draw the ideal pyramid of energy up to four trophic levels where 10,000 J are available from sun light to the primary producer. Indicate the amount of end product available at each trophic level.
    (b) Why is pyramid of energy always upright? Explain.

(c) Mention the limitations of an ecological pyramid.

26. (a) Give an example for a pyramid where small standing crop of phytoplankton supports large standing crop of zooplankton. Draw the pyramid.

(b) How does phosphorus cycle differ from carbon cycle?

PREVIOUS BOARD QUESTIONS

27. Explain how hydrarch succession progresses from hydric to mesic condition and forms a stable climax community. You may use a flow chart.

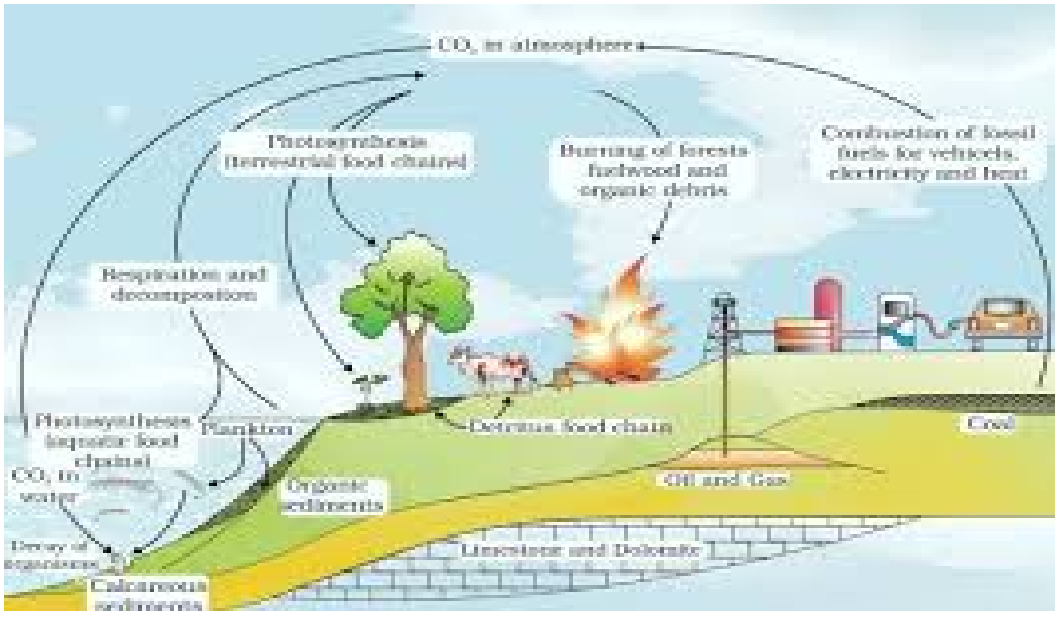
28. Global carbon is fixed in the biosphere through photosynthesis. Explain any two ways by which carbon is returned to the atmosphere.

29. Describe the model of phosphorus cycle in the terrestrial ecosystem

30. (a) Name the bio-geo chemical cycle shown below.

(b) How would the flow of nutrient in the cycle be affected due to large scale deforestation? Explain giving reasons.

(c) Describe the effect of increased level of this nutrient in the atmosphere on our environment.



PREPARED BY MS. REJITHA S

CHECKED BY HOD - SCIENCE