



# Chapter 25 Ecosystem

## TOPICWISE MULTIPLE CHOICE QUESTIONS INTRODUCTION

### KIPS MCQs

- (1) Producers, consumers, decomposers contribute to form:
  - (a) Food web
  - (b) Natural cycle of nutrient
  - (c) Biotic factors
  - (d) All of the above
- (2) Ecology comes from the Greek words Oikos, which means:
  - (a) Collection
  - (b) Environment
  - (c) Family household
  - (d) System
- (3) Combination of all biomes of earth is called:
  - (a) Ecosystem
  - (b) Bio-ecosystem
  - (c) Planetary ecosystem
  - (d) Habitat
- (4) The major unit of ecology is:
  - (a) Biomass
  - (b) Biosphere
  - (c) Ecosystem
  - (d) Biomes
- (5) Ecology is the study of:
  - (a) The relationship between living things and their environment
  - (b) The interactions between biotic and abiotic parts of the environment
  - (c) The interactions between organisms and the places where they live
  - (d) All of the above

### PASTPAPERS MCQs

- (6) Lithosphere includes: (FSD 2021)
  - (a) Earth's Soil
  - (b) Air
  - (c) Water
  - (d) Gases

### BIOSPHERE

### KIPS MCQs

- (7) Which definition of Niche was presented by Joseph Grinnell?
  - (a) It is a species occupation
  - (b) Role of specie played in an ecosystem
  - (c) Ultimate distributional unit within which a specie is restrained
  - (d) Both a and b
- (8) The biosphere covers about:
  - (a) 5-10km
  - (b) 8-10km
  - (c) 6-10 km
  - (d) 16-20km
- (9) Study of a single population's relationship to its environment is called:
  - (a) Ecology
  - (b) Synecology
  - (c) Autecology
  - (d) Geology

### PASTPAPERS MCQs

- (10) All populations within an ecosystem are known as a: (DGK 2017)
  - (a) Biosphere
  - (b) Biome
  - (c) Succession
  - (d) Community

- (11) Biosphere is spread out over the surface of planet earth extending about: (DGK 2017)  
 (a) 3-6 kilometers (b) 4-8 kilometers  
 (c) 8-10 kilometers (d) 8-12 kilometers
- (12) Who proposed the term niche in ecology? (RVP 2017)  
 (a) Haeckel (b) Darwin  
 (c) Charles Eton (d) Joseph Grinnell
- (13) The term niche was first proposed by Joseph Grinnell an American: (LHR 2018)  
 (a) Embryologist (b) Ecologist  
 (c) Ornithologist (d) Physiologist
- (14) Study of different communities with relation to environment is called: (FSD 2018)  
 (a) Synecology (b) Autecology  
 (c) Embryology (d) Zoology
- (15) In 1917, the term Niche was first proposed by American Ornithologist named: (SWL 2018)  
 (a) Earnest Haeckel (b) Joseph Grinnell  
 (c) Lamark (d) Darwin
- (16) Who defined "Niche" as species occupation? (LHR 2021)  
 (a) Grinnell (b) Charles Elton  
 (c) Cuvier (d) Haeckel
- (17) The role a species plays in a community including behaviour and influence is: (SWL 2021)  
 (a) Habitat (b) Biome  
 (c) Niche (d) Population
- (18) A niche is defined as the role of a species that plant in community including: (SGD 2022)  
 (a) Behaviour (b) Influence  
 (c) Both A, B (d) None of these
- (19) Study of relationship of different communities to environment is called: (MTN 2019, MTN 2021, LHR 2022)  
 (a) Synecology (b) Autecology  
 (c) Embryology (d) Zoology
- (20) The actual location of place where an organism lives, called: (LHR 2017, MTN 2021, SWL 2022, LHR 2022)  
 (a) Niche (b) Adobe  
 (c) Terrain (d) Habitat

### COMPONENTS OF ECOSYSTEM

#### KIPS MCQs

- (21) Fungi and bacteria are:  
 (a) Consumers (b) Producers  
 (c) Decomposers (d) None of these
- (22) Which are the recyclers of ecosystem?  
 (a) Producers (b) Consumers  
 (c) Top carnivores (d) Decomposers
- (23) Which is included in abiotic components?  
 (a) Atmosphere (b) Lithosphere  
 (c) Hydrosphere (d) All of the above
- (24) In which tropical level all green plants, grass and phytoplankton are included?  
 (a) T1 (b) T2  
 (c) T3 (d) T4

**PASTPAPERS MCQs**

- (25) In nature, balance of ecosystem is kept by: (SGD 2017)  
 (a) Food chain (b) Food web  
 (c) Succession (d) Tropic level conscious
- (26) All the Food Chain and Food Webs begin with: (GRV 2017, BWP 2018)  
 (a) Primary Consumer (b) Secondary Consumer  
 (c) Decomposer (d) Producers
- (27) The abiotic component of an ecosystem is: (LHR 2021)  
 (a) Temperature (b) Producer  
 (c) Consumer (d) Decomposer
- (28) Which of the following is biotic factor: (LHR 2021)  
 (a) Topography (b) Gravity  
 (c) Soil energy (d) Decomposers
- (29) Pick the biotic component from the following. (DGK 2022)  
 (a) Soil (b) Atmosphere  
 (c) Water (d) Animals

**SUCCESSION**

**KIPS MCQs**

- (30) Succession process involves:  
 (a) Change in community (b) Change in non living environment  
 (c) Community relay (d) All of the above
- (31) Primary succession that occurs in pond is called:  
 (a) Xerosere (b) Hydrosere  
 (c) Derosere (d) None of these
- (32) Plants growing in xeric conditions are called:  
 (a) Mesophytes (b) Xerophytes  
 (c) Hydrophytes (d) Pteridophytes
- (33) In each case, succession begin by a few invaders called:  
 (a) Initiators (b) Pioneers  
 (c) Producers (d) Parasites
- (34) During the process of succession, the community at each stage is called:  
 (a) Pioneer community (b) Climax community  
 (c) Seral community (d) Stable community
- (35) In which lichens are just like crumpled leaves:  
 (a) Crustose lichen stage (b) Foliage lichen stage  
 (c) Moss stage (d) Herbaceous stage

**PASTPAPERS MCQs**

- (36) Herbaceous stage in xerosere is the: (SWL 2017)  
 (a) First stage (b) Third stage  
 (c) Fourth stage (d) Last stage
- (37) The study of succession on a dry soil or rock is called: (MTN 2017)  
 (a) Hydrosere (b) Xerosere  
 (c) Derosere (d) Terosere
- (38) In each case succession begins by a few hardy invaders called: (RWP 2017)  
 (a) Gipsies (b) Early settlers  
 (c) Swarmers (d) Pioneers

- (39) Primary succession may start in a dry soil or rock is called: (MTN, 2018, LHR 2019)  
 (a) Hydrosere (b) Xerosere  
 (c) Deseret (d) Derosere
- (40) Succession begins by a few hardy invaders called: (LHR 2017, EWP 2022, FWP 2022)  
 (a) Initiators (b) Pioneers  
 (c) Founders (d) Creators

### PREDATIONS, PARASITISM, SYMBIOSIS

#### KIPS MCQs

- (41) A grasshopper eats grass and it is eaten by a rat, it refers to:  
 (a) Environment and niche (b) Environment and habitat  
 (c) Food web and trophic level (d) Niche and tropic level
- (42) Disease in living organism caused by parasites is called:  
 (a) Infestation (b) Parasitism  
 (c) Predation (d) None of these
- (43) Which example is wrong in the predator-prey cycle?  
 (a) seal/fish (b) Frog/mosquito  
 (c) Hawk/small birds (d) Cat/tiger
- (44) In a balanced aquarium , the fish supply the green plants with:  
 (a) Oxygen (b) Water  
 (c) Carbon dioxide (d) Glucose

#### PASTPAPERS MCQs:

- (45) An association between organisms of different species in which one partner gets benefit and other is harmed: (LHR 2018)  
 (a) Mutualism (b) Symbiosis  
 (c) Parasitism (d) Commensalism
- (46) Disease in living organisms caused by parasites is called: (GRW 2019)  
 (a) Parasitism (b) infestation  
 (c) infection (d) predation
- (47) Mutualism is a type of: (RWP 2019)  
 (a) Symbiosis (b) Commensalism  
 (c) Parasitism (d) Predation

### MUTUALISM, COMMENSALISM AND GRAZING

#### KIPS MCQs

- (48) The symbiotic relationship in which both the partners get benefit is called:  
 (a) Symbiosis (b) Mutualism  
 (c) Commensalism (d) None of these
- (49) Sharks may have small fish called \_\_\_\_\_ in commensalism relationship.  
 (a) Rumors (b) Trout  
 (c) Remoras (d) Lamprey
- (50) The relationship between *Rhizobium* and Legumes is:  
 (a) Mutualistic (b) Parasitic  
 (c) Predatory (d) Competitive
- (51) Over grazing may lead to the formation of:  
 (a) Desert (b) Tundra  
 (c) Taiga (d) Grassland
- (52) Which of the following is more tolerant to herbivores?  
 (a) Grass (b) Herbs  
 (c) Both a and b (d) None of these
- (53) Root nodule bacteria fix nitrogen in soil air, converting it into:

- (a) Nitrates  
(c) Amino acid
- (b) Ammonia  
(d) Carbohydrates

**PAST PAPERS MCQs**

- (54) Lichen is a symbiotic association between a fungus and an/a: (TSD 2017)  
(a) Gymnosperm (b) Alga  
(c) Angiosperm (d) Diatom
- (55) Relationship between Pinoras and Sharks is an example of: (MTN 2017)  
(a) Commensalism (b) Mutualism  
(c) Predation (d) Parasitism
- (56) The relationship between insect and flowering plants is an example of: (SGD 2018)  
(a) Parasitism (b) Predation  
(c) Mutualism (d) Commensalism
- (57) Lichen is a symbiotic association between fungus and: (MTN 2018)  
(a) Diatom (b) An alga  
(c) Angiosperms (d) Gymnosperm
- (58) In root nodules, the organisms present are: (LHR 2019)  
(a) Bacteria (b) Cyanobacteria  
(c) Algae (d) Fungi
- (59) The bacteria in the root nodules fix nitrogen in soil from air, converting it into \_\_\_\_\_. (BWP 2019)  
(a) Nitrat (b) Nitrite  
(c) Ammonia (d) Amino Acid
- (60) Relationship between Shark and Remora attached to it is an example of: (BWP 2021)  
(a) Symbiosis (b) Mutualism  
(c) Parasitism (d) Commensalism
- (61) Over grazing may lend in the transformation of grassland into a: (MTN 2022)  
(a) Savanna (b) Desert  
(c) Taiga (d) Tundra

**BIOGEOCHEMICAL CYCLES****KIPS MCQs**

- (62) The conversion of nonliving material into living protoplasm is known as:  
(a) Assimilation (b) Respiration  
(c) Reproduction (d) Absorption
- (63) The oxidation of ammonium ion is called:  
(a) Assimilation (b) Nitrification  
(c) Ammonification (d) Denitrification
- (64) In transfer of energy from one trophic level to other, the major by product is:  
(a) Mineral elements (b) Energy in form of heat  
(c) Food (d) Oxygen
- (65) In energy transfer in organisms, if the sunlight energy is 1,000,000 primary consumers get \_\_\_\_\_ Kca/ m<sup>2</sup>/yr energy.  
(a) 10 (b) 100  
(c) 1000 (d) 10,000
- (66) The process of denitrification can occur in:  
(a) Nitrogenous roots (b) Poorly aerated soils  
(c) Leguminous plants (d) Biome
- (67) A short food chain supports community more than higher linked chain due to:  
(a) Equal supply of energy (b) Effective supply of energy at each tropic level  
(c) Both a and b (d) Doesn't support community
- (68) Zinc, iron and iodine are included in:

- (a) Micronutrient (b) Macronutrient  
(c) Nutrient element (d) Major bioelements
- (69) Which one is not a stage of nitrogen cycle?  
(a) Ammonification (b) Nitrification  
(c) Condensation (d) Assimilation
- (70) Amount of energy lost between two tropical levels:  
(a) 70-80% (b) 30-90%  
(c) 60-80% (d) 10%
- (71) Nitrogen makes up 78% of the gases in:  
(a) Lithosphere (b) Biosphere  
(c) Atmosphere (d) Hydrosphere
- (72) The total energy from the sun is trapped by the producers in an ecosystem is about:  
(a) 3% (b) 6%  
(c) 2% (d) 1%
- (73) The conversion of nitrates to nitrogen gas by bacteria is called:  
(a) Nitrification (b) Nitrogen fixation  
(c) Denitrification (d) Excretion
- (74) In nitrogen cycle, *Nitrobacter* converts:  
(a) Amino acid to ammonium ions (b) Ammonium ion to nitrites  
(c) Nitrites to nitrates (d) Nitrates to gaseous nitrogen
- (75) The conversion of nitrogen gas to ammonia by bacteria is called:  
(a) Nitrification (b) Nitrogen fixation  
(c) Decay (d) Denitrification
- (76) Organic compounds in dead organic matter is converted into ammonia as a result of:  
(a) Decomposition (b) Nitrogen fixation  
(c) Assimilation (d) Ammonification
- (77) The types of bacteria responsible for converting ammonia to nitrites is:  
(a) *Nitrosomonas* (b) *Rhizobium*  
(c) *Nitrobacter* (d) *Pseudomonas*
- PAST PAPERS MCQs**
- (78) The bacteria in the root nodules fix nitrogen and convert it into: (SGD 2021)  
(a) Nitrate (b) Nitrite  
(c) Amino acid (d) Ammonia
- (79) Several Bacteria in the soil are able to oxidize Ammonia or Ammonium Ions, this oxidation is called: (BWP 2017)  
(a) Amino Oxidation (b) Nitrification  
(c) De-nitration (d) Ammonification
- (80) Energy from sun flows through an ecosystem in the form of: (GRW 2018)  
(a) Light (b) Radiant heat  
(c) Temperature (d) Evaporation
- (81) Several bacteria in the soil are able to oxidize ammonia or ammonium ions: (DGK 2018)  
(a) Ammonification (b) Nitrification  
(c) Oxidation (d) Denitrification
- (82) Which of the following is macronutrient? (MTN 2019)  
(a) Zinc (b) Iron  
(c) Sulphur (d) Iodine
- (83) The process in which micro-organ use proteins and release ammonia or ammonium ion is called (FSD 2021)  
(a) Nitrification (b) Denitrification  
(c) Ammonification (d) Assimilation

**ANSWER KEY**

(Topic Wise Multiple Choice Questions)

1	21	41	61	81	101	121	141
2	22	42	62	82	102	122	142
3	23	43	63	83	103	123	143
4	24	44	64	84	104	124	144
5	25	45	65	85	105	125	145
6	26	46	66	86	106	126	146
7	27	47	67	87	107	127	147
8	28	48	68	88	108	128	148
9	29	49	69	89	109	129	149
10	30	50	70	90	110	130	150
11	31	51	71	91	111	131	151
12	32	52	72	92	112	132	152
13	33	53	73	93	113	133	153
14	34	54	74	94	114	134	154
15	35	55	75	95	115	135	155
16	36	56	76	96	116	136	156
17	37	57	77	97	117	137	157
18	38	58	78	98	118	138	
19	39	59	79	99	119	139	
20	40	60	80	100	120	140	

**MULTIPLE CHOICE QUESTIONS  
INTRODUCTION**

**KIPS SHORT QUESTIONS:**

**Q: 1 Define ecology.**

**Ans:** The study of the relationship of organisms to their environment is called ecology.

**Q: 2 Define ecosystem and eco-components.**

**Ans: Ecosystem:**

A unit or area where organisms interact with their environment is called ecosystem.

**Eco-components:**

The ecosystem consists of two basic interacting components, the living or biotic, and the physical or abiotic factors. Biotic components consist of animals, plants, fungi, micro-organisms etc. and abiotic components are atmosphere, climate, soil and water.

**Q: 3 What is community?**

**Ans:** All populations of different species within an ecosystem are known as a community and are in interconnected manner to one another.

**Q: 4 What is biome? How many biomes are presents?**

**Ans: Biome:**

Major types of ecosystems, those that occupy broad geographical regions primarily determined by climate are called biomes.

**Major Biomes:**

Some major terrestrial biomes are forest, grass land, and desert. Combined the biome of earth together form the planetary ecosystem.

**PAST PAPERS QUESTIONS**

**Q: 5** Define ecosystem. Explain its various biotic components. **(GRW 2017)**

**Q: 6** Define the term ecosystem. **(LHR 2019)**

**Q: 7** How community differs from population? **(DGK 2019)**

**Q: 8** Differentiate population from community. **(SGD 2019)**

**Q: 9** Compare population and community and give their example. **(RWP 2019)**

**Q: 10** Differentiate between ecosystem and biosphere. **(FSD 2021)**

**Q: 11** Define ecosystem. **(LHR 2016, FSD 2021)**

**Q: 12** Differentiate between population and community.

**(RWP 2017, MTN 2018, BWP 2017, MTN 2021, MTN 2021, SWL 2022)**

**BIOSPHERE**

**KIPS SHORT QUESTIONS**

**Q: 13 How you can differentiate between autecology and synecology.**

**Ans:**

Autecology	Synecology
Study of single population's relationship to environment is called autecology.	Study of the relationship of different communities to their environment is called synecology.

**Q: 14 Define Habitat.**

**Ans:** The actual location of place where an organism lives is called its habitat.

**PAST PAPERS QUESTIONS**

**Q: 15** Differentiate between habitat and niche. **(LHR 2017, SGD 2017, DGK 2019)**

**Q: 16** What is autecology? **(MTN 2017)**

**Q: 17** Define biosphere and ecosystem. **(LHR, 2018)**

**Q: 18** Define synecology. **(LHR, 2018)**



- Q: 19 How synecology is different form autecology? (MTN 2018)  
 Q: 20 Compare autecology and synecology. (MTN 2018)  
 Q: 21 Differentiate between Biosphere and Niche. (RWP 2018)  
 Q: 22 Differentiate between autecology and synecology. (SGD 2017, FSD 2017, BWP 2017, 2018, LHR 2019, SWL 2019)  
 Q: 23 Give two definitions of niche (SWL 2021)  
 Q: 24 What is ecological niche? (BWP 2017, MTN 2021, MTN 2021)  
 Q: 25 Diff Differentiate between habitat and ecological niche. (FSD 2021)  
 Q: 26 What Biome? Write down the names of two terrestrial biomes. (MTN 2019)  
 Q: 27 What is Niche, explain according to Charles Eltan? (LHR 2021)  
 Q: 28 Differentiate between Biomes and Biosphere. (GRW 2021)  
 Q: 29 What is Niche? (BWP 2021, GRW 2021)

**COMPONENTS OF ECOSYSTEM:**

**KIPS SHORT QUESTIONS**

Q: 30 Differentiate between food chain and food web.

Ans:

Food Chain	Food Web
Transferring of food through various trophic levels of ecosystem.	It is the combination of many food chains.
A short food chain of 2 to 3 links, support a community more efficiently.	Food web allows several pathways to obtain food so complex food web with many links determine a stable ecosystem.

Q: 31 Name subdivision of biotic and abiotic components.

Ans: **Biotic Components:**

Producers, consumers and decomposers.

**Abiotic Components:**

Atmosphere, hydrosphere and lithosphere.

Q: 32 What type of food chain better supports a community and why?

Ans: A short food chain of 2 to 3 trophic levels supports a community more efficiently than a long food chain of 5 links.

As in each trophic level about 80 to 90% energy is lost into outer space so in long food chain very little energy is available for higher trophic levels supporting less number of individuals.

**PAST PAPERS QUESTIONS:**

- Q: 33 What are decomposers? Write their role. (DGK 2017)  
 Q: 34 What are Producers and Consumers? (BWP 2018)  
 Q: 35 What are biotic components of an ecosystem? (MTN 2018)  
 Q: 36 Explain food web and its trophic level. (LHR 2017)  
 Q: 37 What is Biome? Name any four major terrestrial biomes. (BWP 2019)  
 Q: 38 Define food chain, draw an example of simple food chain. (DGK 2019)  
 Q: 39 What are decomposers? (LHR 2021)  
 Q: 40 Define food chain and food web. (SGD 2018, GRW 2018, LHR 2019, LHR 2021, FSD 2021)  
 Q: 41 What are producers and consumers? (GRW 2021)  
 Q: 42 Define Ecosystem. Enlist its biotic and abiotic components. (SWL 2021)  
 Q: 43 What is assimilation in Nitrogen-cycle and how it is in contrast to nitrification? (SWL 2021)  
 Q: 44 Define Food Web. (BWP 2021)

- Q: 45 Define food chain. Give example. (FSD 2021)  
 Q: 46 Interpret the role of decomposers in recycling. (FSD 2022)  
 Q: 47 Differentiate between primary and secondary consumers. (RVI 2022, SGD 2022)  
 Q: 48 Write a note on biotic components. (SVL 2022)  
 Q: 49 What is the difference between biotic and abiotic components? Give example of abiotic components. (DGK 2018, DGK 2022)

**SUCCESSION**

**KIPS SHORT QUESTIONS**

Q: 50 Differentiate between pioneer and climax community.

Ans:

Pioneer Community	Climax community
Succession begins by a few hardy invaders called pioneer community.	At the end of succession the diverse and stable community is climax community.
Crustose lichens in xerosere.	Trees or forest at the end of xerosere.

Q: 51 What do you mean by seral community?

Ans: Each stage of succession is called **sera**, and the community at each stage of succession is called **seral community**.

First seral community is called pioneer while last seral community is called climax community.

Q: 52 Give differences between primary and secondary succession.

Ans:

Primary Succession	Secondary Succession
Succession at a bare rock, sand or clear glacial pool, where there were no traces of previous community.	Succession at a place where there was a previous community but was disturbed as in case of fire.
It is a slow process as soil conditions are not suitable and little nutrients.	It is a relatively fast process as previous community has left its mark in the form of improved soil and seeds.

Q: 53 What is meant by succession?

Ans: Sequence of changes in the community structure of an ecosystem over a period of time is called succession.

**PAST PAPERS QUESTIONS**

- Q: 54 What is Succession? Name its types. (MTN 2017)  
 Q: 55 Define secondary succession. (SWL 2017)  
 Q: 56 How primary succession differs from secondary succession? (LHR 2017, 2018)  
 Q: 57 What is foliose lichen stage? Give an example. (FSD 2018)  
 Q: 58 Differentiate between primary and secondary succession. (MTN 2018, BWP2018, BWP 2019, SWL 2019)  
 Q: 59 How xerosere differentiate from hydrosere? (GRW 2019)  
 Q: 60 Write crustose lichens in xerosere. (LHR 2021)  
 Q: 61 Define Plant Succession. (MTN 2019)  
 Q: 62 Name different stages of Xerosere. (MTN 2022)  
 Q: 63 Differentiate between hydrosere and xerosere. (GRW 2018, LHR 2019, SWL 2017, MTN 2017, FSD 2018, SGD 2022)  
 Q: 64 Compare hydrosere with that of xerosere. (FSD 2022)  
 Q: 65 Why secondary succession take time to complete than primary succession? (BWP 2022)

**PREDATIONS, PARASITISM, SYMBIOSIS**

**KIPS SHORT QUESTIONS**

**Q: 66 How a predator is related to its prey?**

**Ans:** In predator-prey relation, the populations of both the organisms are interrelated. As the population size of prey increases that can support more predator, so population of predators also increases.

But when the predators increase in number due to rapid predation the size of prey decreases. In this way ecosystem is kept balanced.

**Q: 67 Explain association of organism in lichen and mycorrhiza.**

**Ans: Lichen**

Lichen is a dual organism composed of symbiotic association of an alga living within a fungus mycelium.

**Mycorrhiza:**

Mycorrhiza is an association between the roots of plants growing in acid soil and certain fungi. The host provides the fungus with an enzyme to digest carbohydrates in leaf litter. In return, the fungus passes mineral ions from the soil to the host.

**Q: 68 What are infestations?**

**Ans:** Diseases in living organisms, which are caused by parasites are called infestations. For example, fungi causing dandruff in our hairs.

**Q: 69 What is symbiosis? Discuss its types.**

**Ans: Symbiosis:**

It is an association between two organisms, which brings benefit to both the organisms.

**Types:**

It can be mutualism or commensalisms.

**PAST PAPERS QUESTIONS:**

**Q: 70** What is predation? Give its significances. **(DGK 2017)**

**Q: 71** What is difference between parasite and parasitism? **(FSD 2017)**

**Q: 72** Differentiate between Predator and Prey. **(MTN 2017)**

**Q: 73** Enumerate the symbiotic associations. **(GRW 2017)**

**Q: 74** What is parasitism? Give its kinds. **(RWP 2017)**

**Q: 75** Define predation. What is its significance? **(DGK 2018)**

**Q: 76** What is the difference between ectoparasite and endoparasite? **(LHR 2019)**

**Q: 77** What is "Prey and Predator"? **(GRW 2019)**

**Q: 78** Define Predation. Explain it with at least two examples. **(MTN 2019)**

**Q: 79** Differentiate between predation and parasitism. **(FSD 2017, DGK 2019)**

**Q: 80** State parasitism and its significance. **(LHR 2021)**

**Q: 81** Differentiate between predator and prey. **(MTN 2021)**

**Q: 82** What is parasitism? Write down its importance. **(LHR 2022)**

**Q: 83** What is prey and predator interaction? Write its significance. **(LHR 2022)**

**Q: 84** Differentiate between ectoparasites and endoparasites. **(SWL 2018, MTN 2021, BWP 2022)**

**Q: 85** Elaborate symbiosis with an example. **(SGD 2022)**

**MUTUALISM, COMMENSALISM AND GRAZING****KIPS SHORT QUESTIONS**

**Q: 5:** How grazers affect the texture of the soil?

**Ans:** The grasses are more resistant than herbaceous plants. They have ability to regrow very fast. But the hooves of grazing animals trample the soil. It change the soil into hard layer. Thus the rain water cannot penetrate into this soil. The water runs off from the upper surface and removes the topsoil with it. Thus over-grazing finally makes the land totally barren.

**Q: 87** What are the advantages and disadvantages of grazing?

**Ans:** Grazing is very important factor in determining the ecosystem.

**Advantage:**

Moderate grazing is very helpful to maintain grassland ecosystem. It destroys the competitors and helps the grass to grow well.

**Disadvantage:**

Over grazing may lead to the transformation of a grassland into a desert.

**PAST PAPERS QUESTIONS**

- Q: 88** Define mutualism by giving an example. (FSD 2017)
- Q: 89** How moderate grazing is helpful for ecosystem? (LHR 2017)
- Q: 90** Write down the significance of root nodules in plants. (LHR 2017)
- Q: 91** What is mutualism? Give example. (LHR 2017)
- Q: 92** Define Grazing. How Grazers affect the texture of the soil? (MTN 2017)
- Q: 93** Define mutualism and give at least one example. (SWL 2017, DGK 2017)
- Q: 94** Write down few lines on crustose lichen stage. (DGK 2017)
- Q: 95** What are lichens? (LHR 2018)
- Q: 96** Define commensalism. Give example. (SGD 2017, FSD 2018)
- Q: 97** Differentiate between Mutualism and commensalism. (SGD 2018)
- Q: 98** Write the consumers of grassland. (FSD 2018)
- Q: 99** Define mutualism. Give an example. (SWL 2018)
- Q: 100** Differentiate between mycorrhiza and lichens. (SWL 2018)
- Q: 101** What are Lichens? Write its significance. (MTN 2018)
- Q: 102** What is grazing? How grazers affect the texture of soil? (LHR, 2018)
- Q: 103** What do you know about mycorrhiza? (SGD 2019)
- Q: 104** Define grazing. What is the result of over grazing? (LHR 2019)
- Q: 105** What is commensalism? Give example. (SWL 2019)
- Q: 106** Explain Mycorrhiza with an example (BWP 2019)
- Q: 107** What are root nodules? Give their importance. (RWP 2019)
- Q: 108** What are root modules? Give an example. (MTN 2019)
- Q: 109** What do you know about Commensalism? (MTN 2019)
- Q: 110** Write down biotic comports. (GRW 2021)
- Q: 111** Write down a note on root nodules. (GRW 2021)
- Q: 112** What is symbiosis? Give one example. (MTN 2021)
- Q: 113** Define Lichens in detail. (BWP 2021)
- Q: 114** What is commensalism? (DCK 2019, GRW 2021, DCK 2022)
- Q: 115** How dose overgrazing cause adverse affect in a pastureland? (DGK 2022)
- Q: 116** How root nodules help in the growth of plants? (MTN 2022)
- Q: 117** Give an example and write down about commensalism. (RWP 2022)
- Q: 118** Justify that lichens are example of mutualism. (RWP 2022)

**BIOGEOCHEMICAL CYCLES**

**KEY SHORT QUESTIONS**

**Q: 119** How nitrogen is lost in atmosphere?

**Ans:** The soil nitrogen is converted into atmospheric gaseous nitrogen by a process known as **Denitrification**. Some denitrifying bacteria in the absence of oxygen break down nitrates back into the atmosphere and using the oxygen for their own respiration.

**Q: 120** Differentiate between gross primary production and net primary production.

Ans:

Gross Primary Production	Net Primary Production
It is total amount of energy fixed by plants into food.	It is amount of energy left after plants have met their respiratory need.
It is total photosynthate produced by the fixing 1% light energy.	It is also called as plant biomass available for next trophic level.

**Q: 121 Write the significance of root nodules in plants.**

Ans:

- The legume plants, pea and bean are the hosts of symbiont bacteria.
- These bacteria inhabit the roots of these plants and form root nodules.
- The root nodules bacteria fix nitrogen in soil air.
- They convert this nitrogen into amino acid.
- These amino acids are used by the host.
- In return, host provides bacteria with food and protection.

**Q: 122 Differentiate between primary productivity and secondary productivity.**

**Ans:** In ecology, productivity refers to the rate of generation of biomass in an ecosystem. Productivity of autotrophs such as plants is called primary productivity. Whereas, all biomass generation by heterotrophs is called secondary productivity. Organisms responsible for secondary production include animals, protists, fungi and bacteria.

**Q: 123 What is nitrogen cycle?**

**Ans:** The process by which limited amount of nitrogen is circulated and re circulated throughout the world of living organisms is known as the nitrogen cycle

**Q: 124 What is trophic level?**

**Ans:** Each feeding level in a food chain is called trophic level. First trophic level in each food chain include producers.

**Q: 125 Why the process of assimilation is called reverse of nitrification?**

**Ans:** In nitrification, ammonium ion is converted into nitrites and nitrates in soil. When these nitrites and nitrates are taken up by plant for assimilation, they convert them back into ammonium ions for further utilization. So both the processes are reverse of each other.

**Nitrification:**



**Assimilation:**



**Q: 126 Define biogenic elements.**

**Ans: Biogenic elements:**

The chemical elements essential for life in living organisms are called biogenic elements or nutrient elements.

**Examples:**

Carbon, hydrogen, oxygen etc

**Q: 127 What are the function of *Nitrosomonas* and *Nitrobacter*?**

**Ans: *Nitrosomonas*:**

It converts ammonia and ammonium ions to nitrites.

***Nitrobacter*:**

It converts Nitrites ( $\text{NO}_2^-$ ) into Nitrate ( $\text{NO}_3^-$ ).

**Q: 128 Define denitrification.**

**Ans:** In the absence of oxygen bacteria break down nitrates releasing nitrogen back into the atmosphere and using the oxygen for their own respiration. This process is known as denitrification in poorly drained (poorly aerated) soils.

**PAST PAPERS QUESTIONS:**

- Q: 129** What do you understand by the term 'tropic level'? (GRW 2017)
- Q: 130** Write name and role of nitrifying bacteria. (DGK 2017)
- Q: 131** Define the term biogeochemical cycle. (RWP 2017, DGK 2019)
- Q: 132** Differentiate between nitrification and denitrification. (GRW 2018)
- Q: 133** Define ammonification and nitrification. (LHR 2021)
- Q: 134** What is denitrification? (FSD 2021)
- Q: 135** Define ammonification and assimilation. (RWP 2019, SGD 2021)
- Q: 136** How the tropic levels are involved in the flow of energy? (LHR 2022)
- Q: 137** Why nutrient cycles are called biogeochemical cycles? (MTN 2022)
- Q: 138** How micronutrients differ from macronutrients? (SWL 2022)
- Q: 139** What are biogenic elements? Give their types. (BWP 2022)