IB DP YEAR – I (2020-22)-BIOLOGY –HL
UNIT- 4 – ECOLOGY
SUB-UNIT-4.1-SPECIES, COMMUNITY AND ECOSYSTEM
WORKSHEET NO. 1 - DATE – 1.5.2020

Ecological Terms

Differentiate, with examples, between abiotic and biotic factors

Abiotic: …….....

…….....

Biotic:…….....

…….....

With the aid of the following diagram, define the following terms

Species: …...…….....

……...…….....

Population: …...…….....

…….

Community: …….....

……

Habitat: ……..…….....

……...…….....

Ecosystem: …….....

…….....

Modes of Nutrition

Define nutrient **…….....**

…….....

Distinguish between autotroph and heterotroph

Autotroph: …….....

…….....

Heterotroph: …….....

…….....

Differentiate between the following types of heterotrophs, providing an example of each

Consumer: …….....

…….....

Detritivore: …….....

…….....

Decomposer: …….....

……....

NOTE – Read notes.
Read pages from 202 to 207 (up to figure 13) of course book.
Carry out research work on Galapagos tortoises for class discussion (Activity pg-203).
Do in text question given on page 204.

IB DP YEAR – I (2020-22)-BIOLOGY –HL
UNIT- 4 – ECOLOGY
SUB-UNIT-4.1-SPECIES, COMMUNITY AND ECOSYSTEM
WORKSHEET NO. 2 - DATE – 6.5.20

Identify two methods of population sampling

1. …… 2……...

Chi-Squared Test

Complete the chi-squared test for association based on the following information

The distribution of two species of limpets (*L. pelta* and *L. scutum*) are recorded via 150 quadrats.

25 = both species 45 = *L. pelta* only 30 = *L. scutum* only 50 = neither species

1. Identify Hypotheses

Null Hypothesis:

… … … … … … ……..

Alternative Hypothesis:

……..

2. Calculate Frequencies

Observed Frequencies

		L. scutum		
		Present	Absent	Total
L. pelta	Present	25	45	
	Absent	30	50	
	Total			

Expected Frequencies

		L. scutum		
		Present	Absent	Total
L. pelta	Present			
	Absent			
	Total			

Calculate Chi-Squared Value

	Both present	*L. pelta* only	*L. scutum* only	Neither present
$\frac{(O-E)^2}{E}$				

χ^2: …….....

3. Determine Statistical Significance

Degree of Freedom	Probability of Exceeding Critical Value						
	0.90	0.75	0.50	0.25	0.10	0.05	0.01
1	0.016	0.102	0.455	1.32	2.71	3.84	6.63
2	0.211	0.575	1.386	2.77	4.61	5.99	9.21
3	0.584	1.212	2.366	4.11	6.25	7.81	11.34

Conclusion: ..…….....

Ecosystem Sustainability

Compare the fate of energy and nutrients within an ecosystem

……

……

Outline the role of decomposers in maintaining nutrient supply

……

……

Define mesocosm

……

……

NOTE – Watch ppt
Read notes and summary sheet.
Read pages from 210 to 212 of course book.
Do in text question given on page 209.

IB DP YEAR – I (2020-22)-BIOLOGY –HL
UNIT- 4 – ECOLOGY
SUB-UNIT-4.1-SPECIES, COMMUNITY AND ECOSYSTEM
WORKSHEET NO. 3 - DATE – 6.5.20

PAPER-1-QUESTIONS **SUBMISSION DATE : 8.5.20**

1) What is the ecological term for a group of different types of organisms that live together and interact with each other?
   A. Community
   B. Domain
   C. Ecosystem
   D. Population

2) Which organism can best be described as a saprotroph?
   A. A fungus that digests its food externally and absorbs the products of digestion
   B. A beetle that feeds by ingesting the dung of other animal species and digesting its food internally
   C. A single-celled eukaryote that is able to photosynthesize and consumes smaller organisms by endocytosis
   D. A giraffe that feeds by ingesting leaves from an acacia tree

3) Which is **not** essential in a viable mesocosm?
   A. Light source
   B. Autotroph
   C. Saprotroph
   D. Herbivore

4) The Australian pitcher plant (*Cephalotus follicularis*) is a green plant that traps and feeds on flies and other live insects. What is this plant's mode of nutrition?
   A. Producer and saprotroph
   B. Autotroph and detritivore
   C. Autotroph and heterotroph
   D. Consumer and saprotroph

5) In 1789 Gilbert White, a naturalist, observed eight breeding pairs of swifts (*Apus apus*) in the English village of Selborne. On average, each pair of swifts produces two offspring per year. This would allow the population to rise to 1030 swifts over 200 years. A bird survey carried out in 1983 revealed only 12 breeding pairs in this village.
   What could have prevented the numbers rising to 1030?
   I. The number of nesting sites remained the same.
   II. The food supply of the swifts remained constant.
   III. Predatory birds in the area were exterminated.
   A. I only
   B. I and II only
   C. II and III only
   D. I, II and III

6) Limpets are molluscs with conical shells that cling tightly to rocks on seashores. In a study of two species of limpets found on rocks along the Oregon coast, 30 randomly placed quadrats were used to determine how often the two species occurred together. The table shows the data that were collected.

		Lottia pelta		
		Present	**Absent**	**Total**
Lottia scutum	**Present**	15	5	20
	Absent	5	5	10
	Total	20	10	30

Which statistical method will determine whether these two species occur together by chance or by some kind of interaction?

A. Chi-squared test
B. *t*-test
C. Standard deviation
D. Means and ranges

7) In an area of forest measuring 100 m by 100 m, samples were taken to estimate the number of silver maple (Acer saccharinum) trees in the forest. The number of trees counted in each of five areas of 400 m^2 was recorded.

	3			
			5	
4		5		
			8	

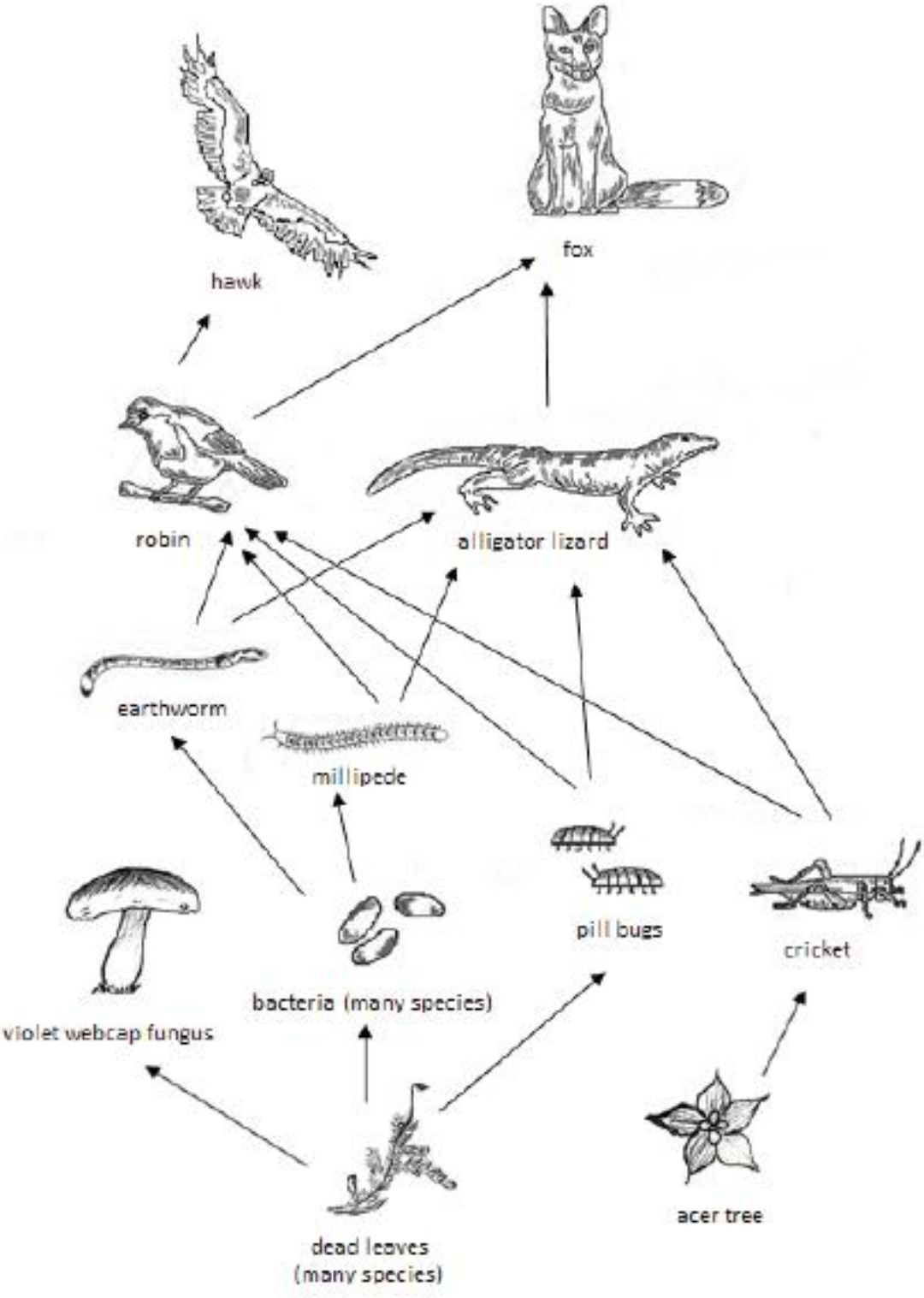
Approximately how many silver maple trees are in the 10000m^2 area of forest?

A. 5
B. 25
C. 125
D. 625

8) What is the classification of an organism that is able to make organic compounds from inorganic nutrients?

A. Autotroph
B. Consumer
C. Detritivore
D. Saprotroph

9) The image shows a food web.



[Source: Adapted from Thompsma/Wikipedia]

Which organism in the food web is assigned to its method of nutrition?

A. A violet webcap fungus is both an autotroph and a heterotroph.

B. A pillbug is a secondary consumer.

C. Bacteria are saprotrophs.

D. A violet webcap fungus is a detritivore.

10) The Venus flytrap (*Dionaea muscipula*) is a photosynthetic plant. It obtains nitrogen but not energy by digesting captured insects.


[Source: adapted from www.flytrapcare.com]
Which term describes this plant?
A. Secondary consumer
B. Autotroph
C. Primary consumer
D. Saprotroph

11) The scarlet cup fungus (*Sarcoscypha coccinea*) obtains its nutrition from decaying wood by releasing digestive enzymes into the wood and absorbingthe digested products.
Which of the following terms describe(s) the fungus?
I. Autotroph
II. Heterotroph
III. Saprotroph
A. III only
B. II and III only
C. I and III only
D. I, II and III

12) The fungus *Calocera viscosa* obtains its nutrients from decaying conifer trees. Which pair of terms describes *C. viscosa's* nutrition?

A.	autotroph	herbivore
B.	autotroph	saprotroph
C.	heterotroph	herbivore
D.	heterotroph	saprotroph

13) The statement is about the role of some bacteria in ecosystems.

> "Bacteria play an important role in recycling nutrients in ecosystems. They live on organic wastes and dead organisms and digest their molecules. They then absorb some of these molecules for their own metabolism, and the rest is used by other organisms."

What is the mode of nutrition of these bacteria?
A. They are autotrophs.
B. They are consumers.
C. They are saprotrophs.
D. They are detritivores.

14) Which statement describes the term species?
A. Members of the same ecological community
B. Organisms that reproduce together to produce fertile offspring
C. Organisms of the same type in a population
D. The first word in the binomial name of an organism

15) What is the mode of nutrition of midge larva?
A. Autotroph
B. Detritivore
C. Heterotroph
D. Saprotroph

16) Which category of organisms is correctly described by its method of nutrition and site of digestion?

	Category of organism	Method of nutrition	Site of digestion
A.	consumer	heterotrophic	internal
B.	saprotroph	autotrophic	external
C.	producer	autotrophic	internal
D.	detritivore	heterotrophic	external

17) What term can be used to describe clams that eat decaying plant matter?
A. Detritivores
B. Tertiary consumers
C. Saprotrophs
D. Decomposers

18) In a pond, two species of fish feed on insects and worms. The insects feed on the green plants that live in the water. What constitutes a population in this ecosystem?
A. All the living organisms
B. All the animals
C. All the fish
D. All the fish of one species

19) What is an ecosystem?
A. An environment in which an organism normally lives
B. A group of organisms of the same species inhabiting an area
C. A group of populations living and interacting with each other in an area
D. A community and its abiotic environment

20) What is a community?
A. A group of organisms living and interacting in the same trophic level
B. A group of populations living and interacting in a food chain
C. A group of organisms of the same species living and interacting in an ecosystem
D. A group of populations living and interacting in an area

21) Which hypothesis is supported by evidence from ecological research?
A. Decomposers are the final stage in the food chain.
B. Producers depend upon consumers more than on decomposers.
C. Decomposers help to recycle energy from food chains.
D. Producers use nutrients that decomposers help to recycle.

22) Which of the following is the best definition of a population?
A. A group of individuals that can interbreed and produce fertile offspring
B. The number of individuals of the same species in a given area
C. A group of species living and interacting with each other in a given area
D. The total number of individuals in a given area

23) What best describes the mode of nutrition of a heterotroph?
A. It ingests only non-living organic matter.
B. It obtains organic molecules from other organisms.
C. It synthesizes its organic molecules from inorganic substances.
D. It produces its organic molecules from chemical reactions using light.

24) *Euglena* is a unicellular organism that feeds on bacteria and uses CO as a carbon source. Which describes the nutrition of this organism?
A. Autotrophic only
B. Heterotrophic only
C. Saprotrophic only
D. Autotrophic and heterotrophic

25) What term refers to organisms of the same species, living in a specified area and time?
A. Population
B. Community
C. Family
D. Genus

26) Which of the following ecological units includes abiotic factors?
A. A community
B. An ecosystem
C. A population
D. A trophic level

27) *Zoophobas morio* is an insect. Its larvae feed on bat feces in caves in Guatemala. What type of organism is a *Zoophobas morio* larva?
A. Autotroph
B. Consumer
C. Detritivore
D. Saprotroph

28) What is a community composed of?
A. Habitats
B. Populations
C. Abiotic factors
D. Biotic and abiotic factors

29) What is a population?

A. Organisms of the same genus living in an ecosystem
B. Organisms living together and interacting in the same habitat
C. Organisms of a species living together in the same area
D. Organisms that can breed together

30) Which pair of statements is correct?

	Autotroph	Heterotroph
A.	obtains organic molecules from other organisms	synthesizes organic molecules from inorganic molecules
B.	synthesizes organic molecules from inorganic molecules	obtains organic molecules from other organisms
C.	synthesizes inorganic molecules from organic molecules	synthesizes organic molecules from inorganic molecules
D.	obtains inorganic molecules from other organisms	obtains inorganic molecules from other organisms

31) Hummingbirds eat flower nectar and small insects. To which nutritional group do they belong?

A. Autotrophs
B. Consumers
C. Detritivores
D. Saprotrophs

32) Which are characteristics of a species?

I. The potential to interbreed to produce fertile offspring
II. The formation of a population with members of the same species within a community
III. The overproduction of offspring

A. I and II only
B. I and III only
C. II and III only
D. I, II and III

33) Which term best defines a group of populations living and interacting with each other in an area?

A. Ecology
B. Community
C. Species
D. Ecosystem

34) The three-toed sloth, *Bradypus variegatus*, lives in tree tops where it feeds on leaves. It also feeds on algae and fungi which live in its fur.

In which trophic group should the three-toed sloth be classified?

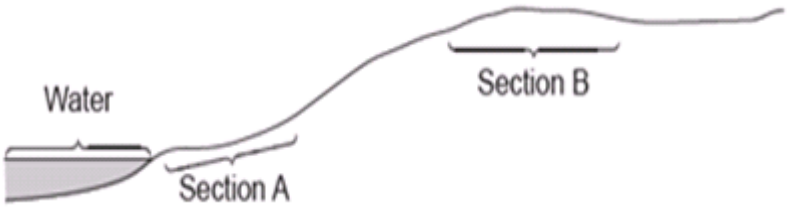
A. Autotroph

B. Consumer

C. Detritivore

D. Saprotroph

35) The image shows a transect through a stream and a field.



Which calculation would test for the association between two species of plants from quadrat data from section A and section B of the field?

A. Correlation coefficient

B. Random numbers sampling

C. Standard deviation

D. Chi-squared

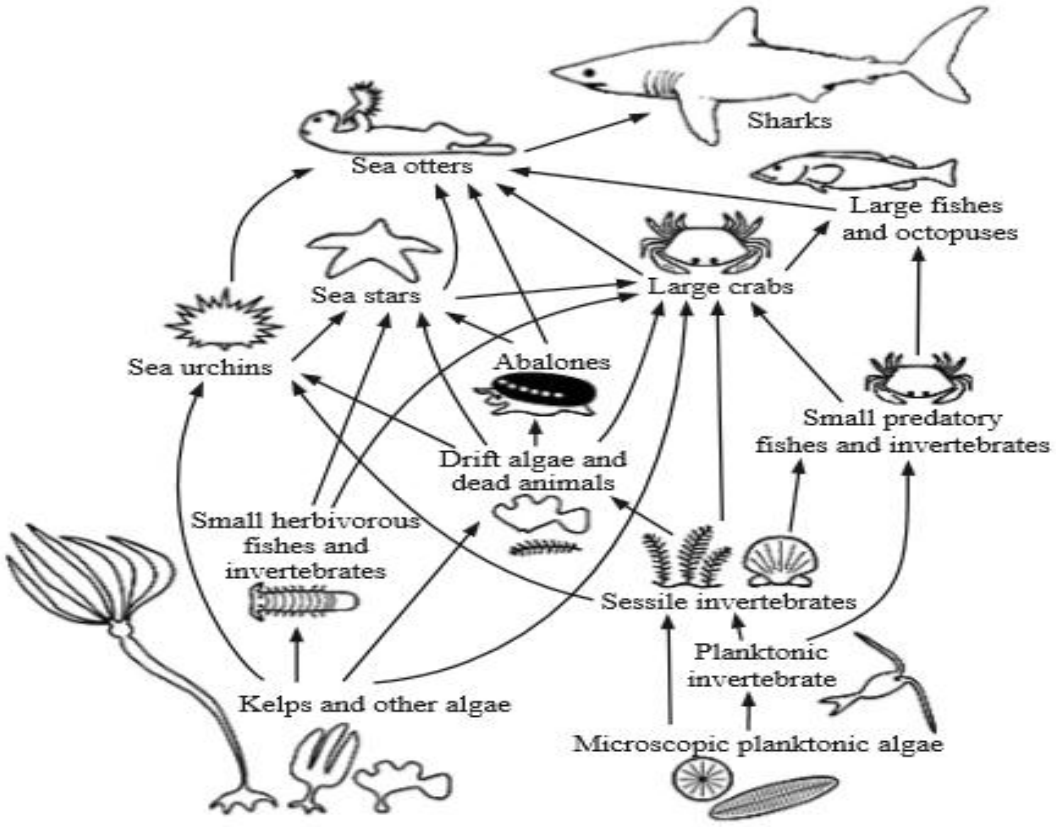
36) Slime moulds (*Acrasiomycota*) are protoctists. They feed on decaying organic matter, bacteria and protozoa.

Which of the terms describes their nutrition?

I. Detritivore
II. Autotroph
III. Heterotroph

A. I only
B. I and II only
C. I and III only
D. I, II and III

37)



[Source: http://cbc.amnh.org/crisis/foodweb.html]

Which organism in this food web is both a secondary and tertiary consumer?

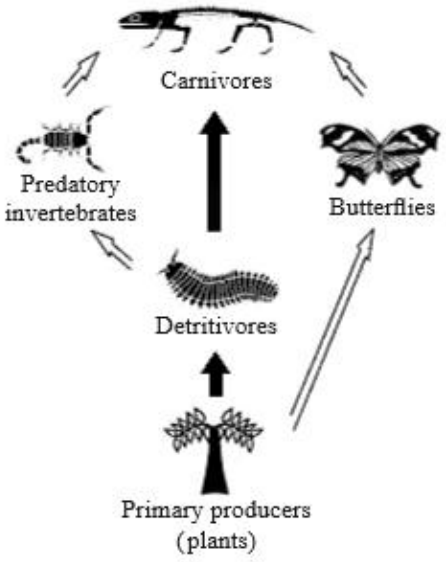
A. Large crab

B. Small herbivorous fish

C. Shark

D. Microscopic planktonic algae

38)

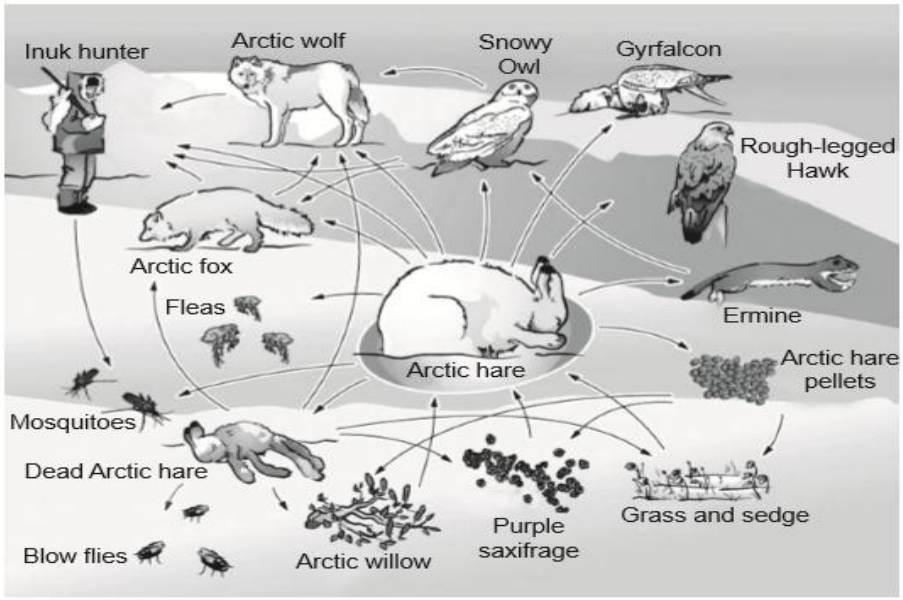


[Adapted with permission from http://jogginsfossilcliffs.net/cliffs/biodiversity/]

`To which trophic level do the butterflies belong?

A. Producers
B. Primary consumers
C. Secondary consumers
D. Tertiary consumers

39) The image shows an Arctic food web



[Source: Ukaliq, the Arctic Hare (http://nature.ca/ukaliq/) © Canadian Museum of Nature]

What is the role of the Arctic hare?

A. Detritivore
B. Primary consumer
C. Secondary consumer
D. Saprotroph

PAPER-2-QUESTIONS

1) Describe how detritivores obtain nutrition and the effects they have in ecosystems. (1)

2) Boreal forests stretch across Canada, Russia and Scandinavia. This northern ecosystem accounts for 29 % of the world's forest areas. The long, cold winters favour tall evergreen trees with either needles or scale-like leaves. These trees are wind-pollinated and their seeds are not enclosed in a fruit. The photograph shows a typical boreal forest in winter.

[Source: TTphoto /Shutterstock]

Identify the dominant plant phylum in the boreal forest. (1)

3) The diploid number of chromosomes in horses (Equus ferus) is 64 and the diploid number in donkeys (Equus africanus) is 62. When a male donkey and a female horse are mated, the result is a mule which has 63 chromosomes.

a). State the haploid number for horses. (1)

b). Explain reasons that mules cannot reproduce. (2)

c) Discuss whether or not horses and donkeys should be placed in the same species. (2)

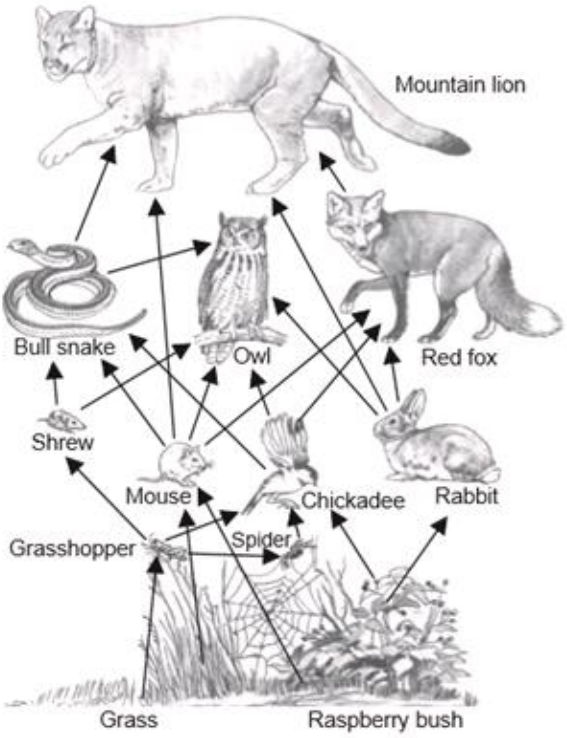
d) A mule was born at the University of Idaho in the USA with 64 chromosomes. Suggest a mechanism by which this could happen. (1)

4) a) Saprotrophic organisms, such as Mucor species, are abundant in soils.

Define saprotrophic organisms (1)

b) State **one** role of saprotrophic organisms in the ecosystem (1)

5)



[Source: adapted from *BSCS Biology: An Ecological Approach*, Figure 1.10, page 12]

The image shows a forest food web from North America.

a. Describe what is meant by a food chain. (3)

b. Identify a food chain with four or more organisms from the forest food web. (1)

c. Deduce the trophic level of each organism identified in your food chain from (b) (2)

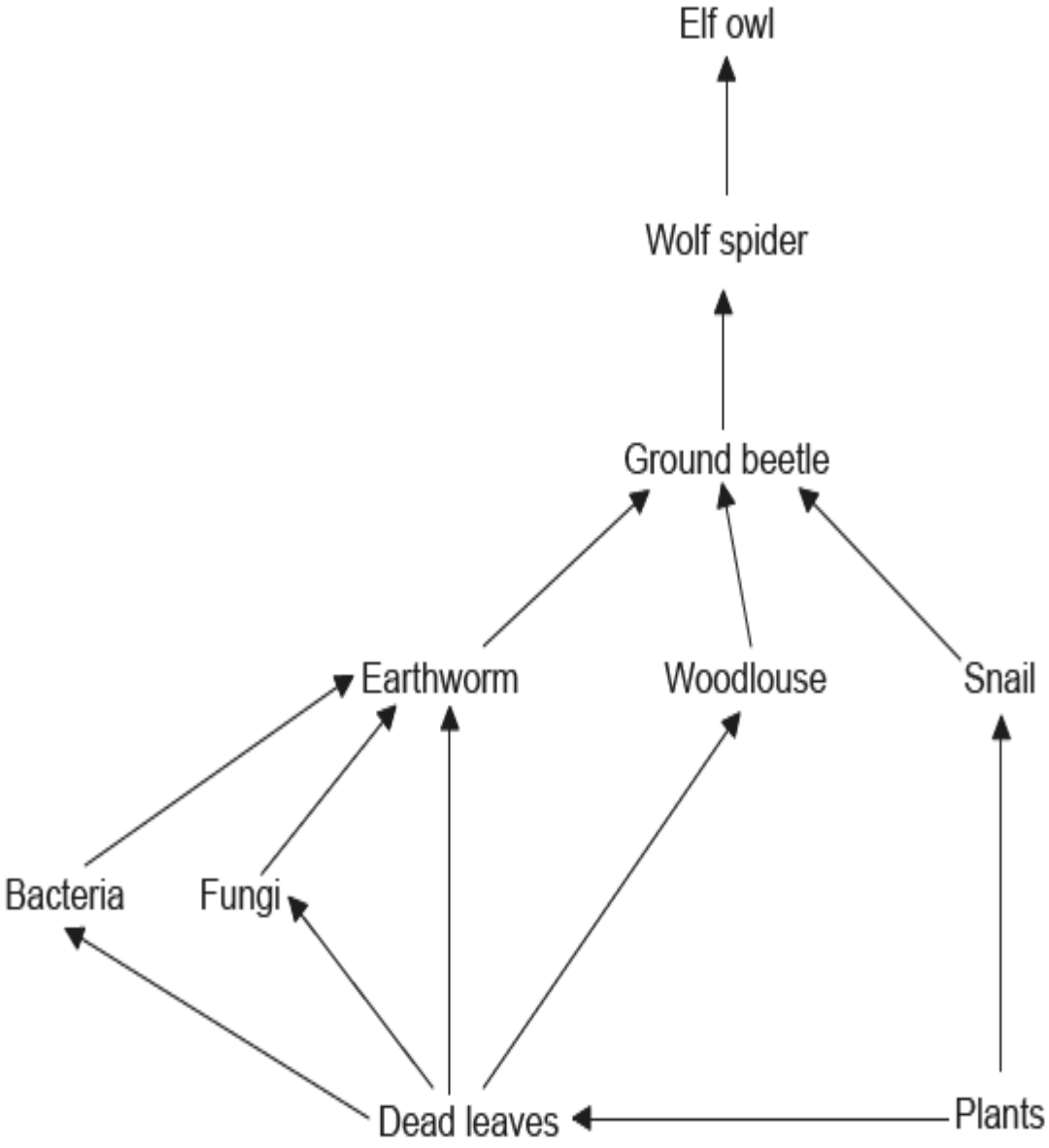
d. State one reason that the population of mountain lions is smaller than the populations of other animals in the food web. (1)

6) Describe what is meant by a food web. [3]

7) Distinguish between autotrophs and heterotrophs. [2]

8) Define saprotroph. [1]

9) The image shows a food web.



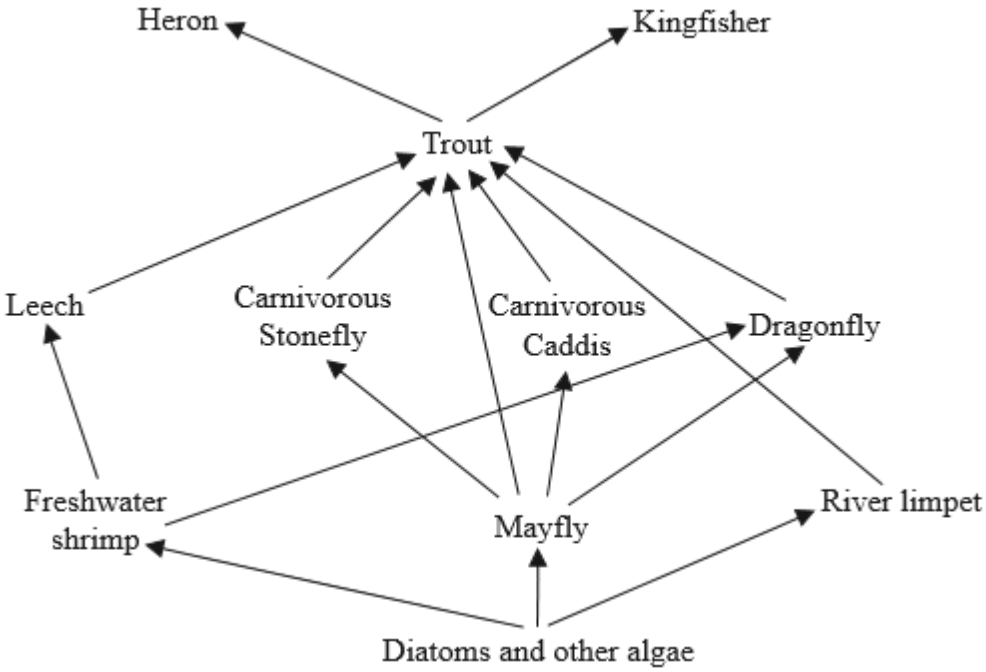
[Source: © International Baccalaureate Organization, 2017]

a.Using the food web, identify a detritivore. [1]

b. Using the food web, identify a saprotroph [1]

c. State the name of the domain to which birds, such as the Elf owl, belong. [1]

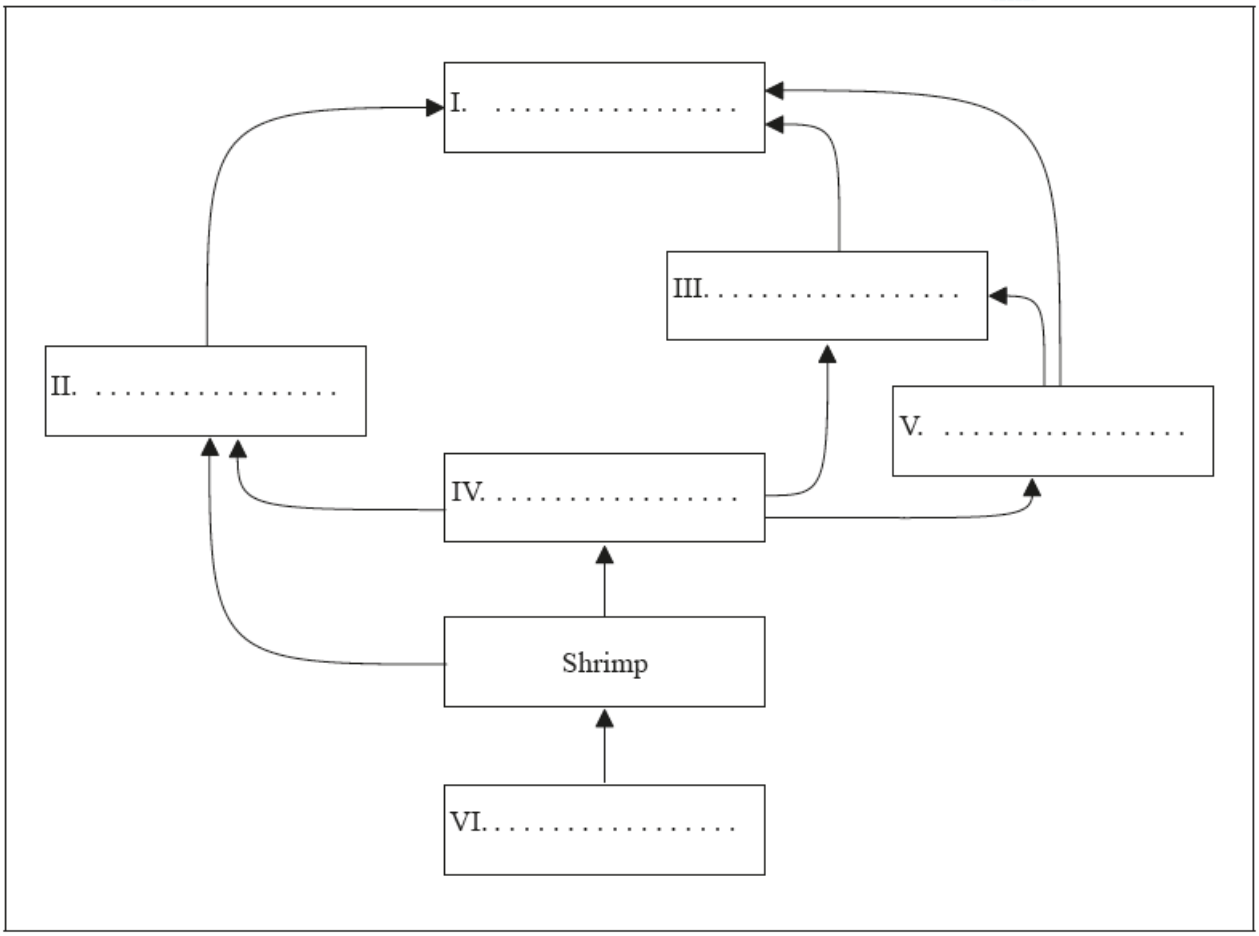
10) The food web below shows some of the feeding relationships found between the organisms living in or near a river in England



a. Which is an autotroph. [1]
b. Identify an organism in the food web that is both a secondary and tertiary consumer. [1]
c. Explain how the flow of energy in the food web differs from the movement of nutrients. [2]
d. Discuss reasons why the levels of a pyramid of energy differ in size. [2]

11) The table provides some information about organisms found in an Arctic environment.

Organism	Prey/food	Predators
Arctic cod	Shrimp	Arctic fox, Narwhal, Seal
Arctic fox	Arctic cod, Seal	Polar bear
Narwhal	Arctic cod, Shrimp	Polar bear
Phytoplankton	None	Shrimp
Polar bear	Arctic fox, Narwhal, Seal	None
Seal	Arctic cod	Arctic fox, Polar bear
Shrimp	Phytoplankton	Arctic cod, Narwhal



a. (i) Complete the table. [2]

(ii) Deduce the trophic level of Artic cod. [1]

==========

NOTE – Read pages from 213 to 216 of course book.

IB DP YEAR – I (2020-22)-BIOLOGY –HL
UNIT- 4 – ECOLOGY
SUB-UNIT-4.2- ENERGY FLOW
WORK SHEET- 1 - DATE – 20.5.20

SUBMISSION DATE – 22.5.20

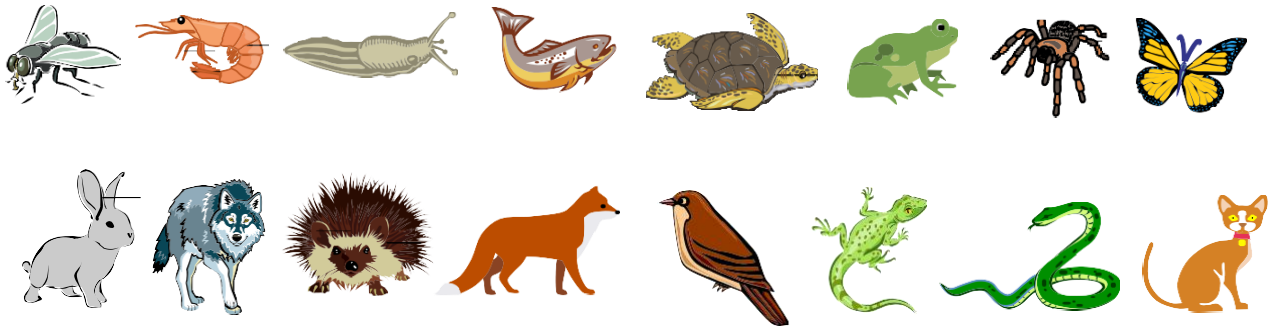
Feeding Patterns

Q1. Define trophic level

……

……

Q2. Use the following animals (and any type of plant matter) to construct three food chains with four levels



Food Chain: …… ⇒ …… ⇒ …… ⇒ ……

Food Chain: …… ⇒ …… ⇒ …… ⇒ ……

Food Chain: …… ⇒ …… ⇒ …… ⇒ ……

Q3. Differentiate between a food chain and a food web

……

……

……

Q4. State what an arrow represents in a food chain or food web

……

Q5. Distinguish between herbivores, carnivores and omnivores

……

……

……

Q6. Construct a food web from the following information (including trophic levels occupied per organism)

- Red foxes feed on raccoons, crayfish, grasshoppers, red clover, meadow voles and squirrels
- Red clovers are eat by grasshoppers, muskrats, red foxes and meadow voles
- Meadow voles, squirrels and raccoons all eat parts of the white oak tree
- Crayfish feed on green algae and detritus, and they are eaten by muskrats and red foxes
- Raccoons feed on muskrats, meadow voles, squirrels and white oak

Q7. BOOK page no. 214

Data-based questions: Insolation

Insolation is a measure of solar radiation The two maps in figure 2 show annual mean insolation at the top of the Earth's atmospher (upper map) and at the Earth's surface (lower map).

Questions

1 State the relationship between distance from the equator and insolation at the top of the Earth's atmosphere. [1]

2 State the mean annual insolation in Watts per squar metr for the most northerly part of Australia

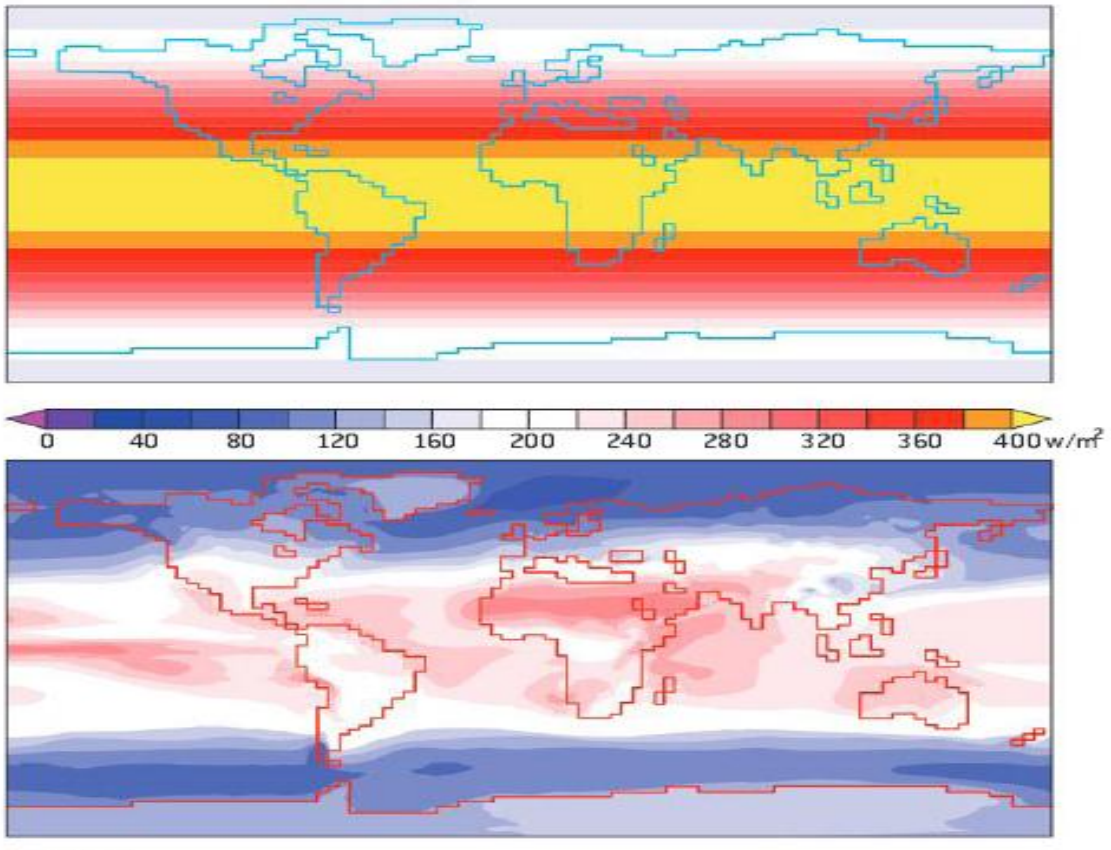
a) at the top of the atmosphere [1]

b) at the Earth's surface. [1]

3 Suggest reasons for differences in insolation at the Earth's surface between places that are at the same distance from the equator. [2]

4 Tropical rainforests ar found in equatorial regions of all continents. They have very high rates of photosynthesis. Evaluate the hypothesis that this is due to very high insolation. Include named parts of the world in your answer. [5]

.



▲ Figure 2

IB DP YEAR – I (2020-22)-BIOLOGY –HL
UNIT- 4 – ECOLOGY
SUB-UNIT-4.2- ENERGY FLOW
WORK SHEET- 2 - DATE – 22.5.20
SUBMISSION DATE – 27.5.20

Energy Transfer

Q1. State the initial source of energy for almost all communities

……

Q2. How efficient are most biological energy transformations?

……

Q3. List three ways in which energy may be lost from one trophic level to the next

1……

2……

3……

Q4. Describe the flow of energy in ecosystems

……

……

……

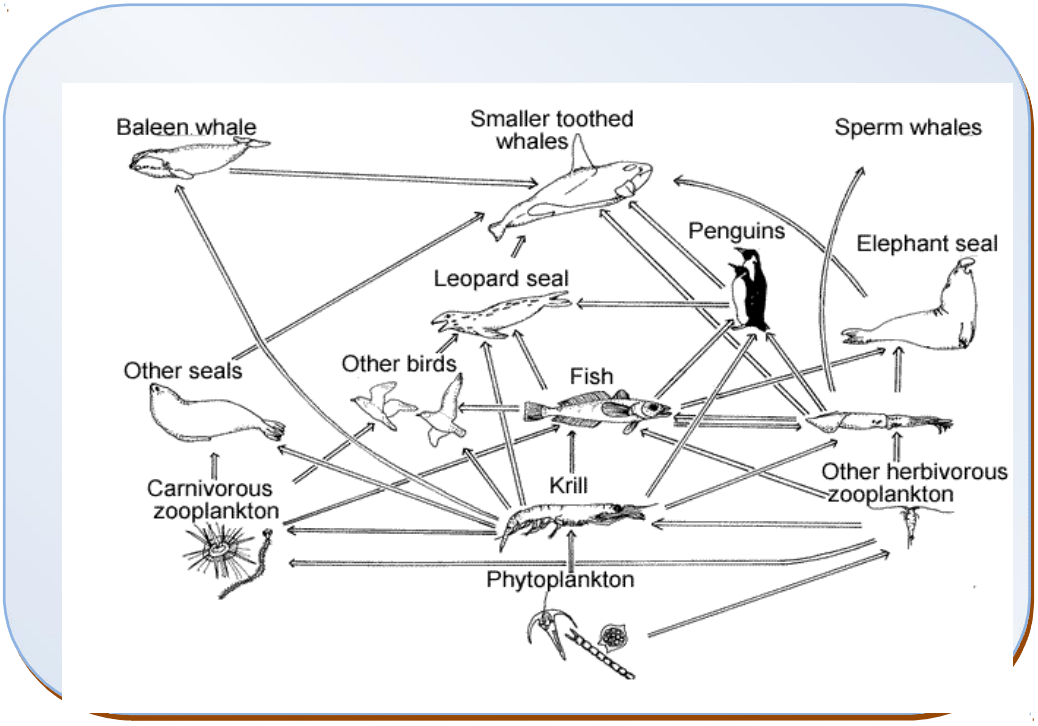
……

……

IB DP YEAR – I (2020-22)-BIOLOGY –HL
UNIT- 4 – ECOLOGY
SUB-UNIT-4.2- ENERGY FLOW
WORK SHEET- 3 - DATE – 27.5.20
SUBMISSION DATE – 29.5.20

IB Style Questions Ecological Pyramids

1. This diagram represents an Antarctic food web.



How is energy lost between the trophic levels?

I. Heat loss through cell respiration

II. Material not consumed

III. Material not absorbed during digestion

A. I and II only

B. I and III only

C. II and III only

D. I, II and III

2. Which of the following statements relating to "pyramids of energy" is true?

A. they are hardly ever inverted in shape.

B. they show how energy is cycled in a given ecosystem.

C. they always have the same shape as the pyramid of numbers for the relationship being studied.

D. they can be inverted if one population has a larger biomass than another.

3. A group of organisms of the same species occupying a given area at a given time is

A. a biome

B. a population

C. an ecosystem

D. a community

4. Wolves and lions are said to occupy the same trophic level because they

A. care both terrestrial

B. are both large mammals

C. both eat primary consumers

D. use their food with about a 10% efficiency

5. Energy passes along a food chain in the form of

A. chemical energy

B. kinetic energy

C. light energy

D. heat energy

6. In a pyramid of numbers, a reduction in the number of organisms from one trophic level to the next can always be observed when there is an increase in

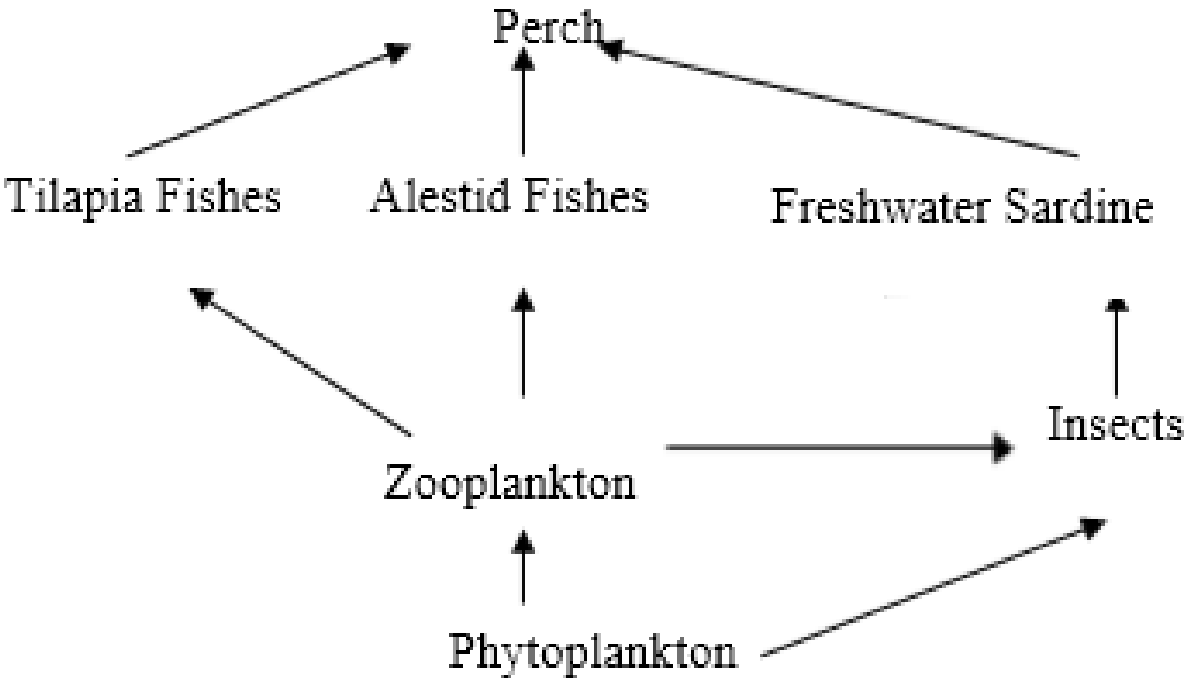
A. the size of the organism

B. temperature

C. energy

D. birth rate

7. The following food web shows some of the feeding relationships in a lake in Western Africa.



Which one of the following statements is correct?

A. Tilapia fishes and zooplankton are both primary consumers.

B. There would most probably be more perch in the lake than sardines.

C. Alestid fishes and fresh water sardines are both primary consumers.

D. Perch can be a tertiary consumer or fourth level (quaternary) consumer depending upon the food chain involved.

8a. Explain how producers and consumers are different.

....

....

8b. What is the difference between a primary and a secondary consumer?

....

....

8c. Distinguish between herbivores, carnivores and decomposers

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....

9. The net production of energy in photosynthesis of plants in grassland is 800 kJ m^{-2} y^{-1}. The total energy passed on to the primary consumers is 70 kJ m^{-2} y^{-1}. Only 10% of this energy is passed on to the secondary consumers.

(a) Calculate the percentage of the net productivity of energy which is passed on to the primary consumers

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(b) Suggest a reason why the transfer to the percentage of energy transferred to the secondary consumers is greater than the energy which is passed on to the primary consumers.

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10. Describe how energy enters a community, flows through it and is lost from it.

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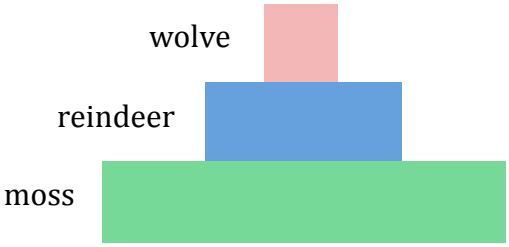
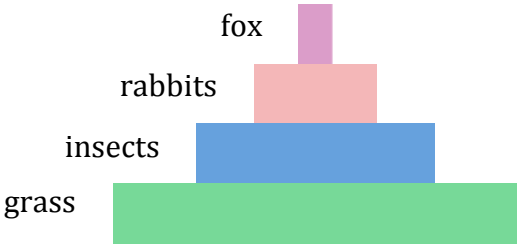
IB DP YEAR – I (2020-22)-BIOLOGY –HL
UNIT- 4 – ECOLOGY
SUB-UNIT-4.2- ENERGY FLOW
WORK SHEET- 4 - DATE – 27.5.20

SUBMISSION DATE – 29.5.20

Q1. With the aid of the following diagrams, explain the reasons for the shape of a pyramid of energy





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Q2 State the units of measurement used in a pyramid of energy

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Define biomass

……

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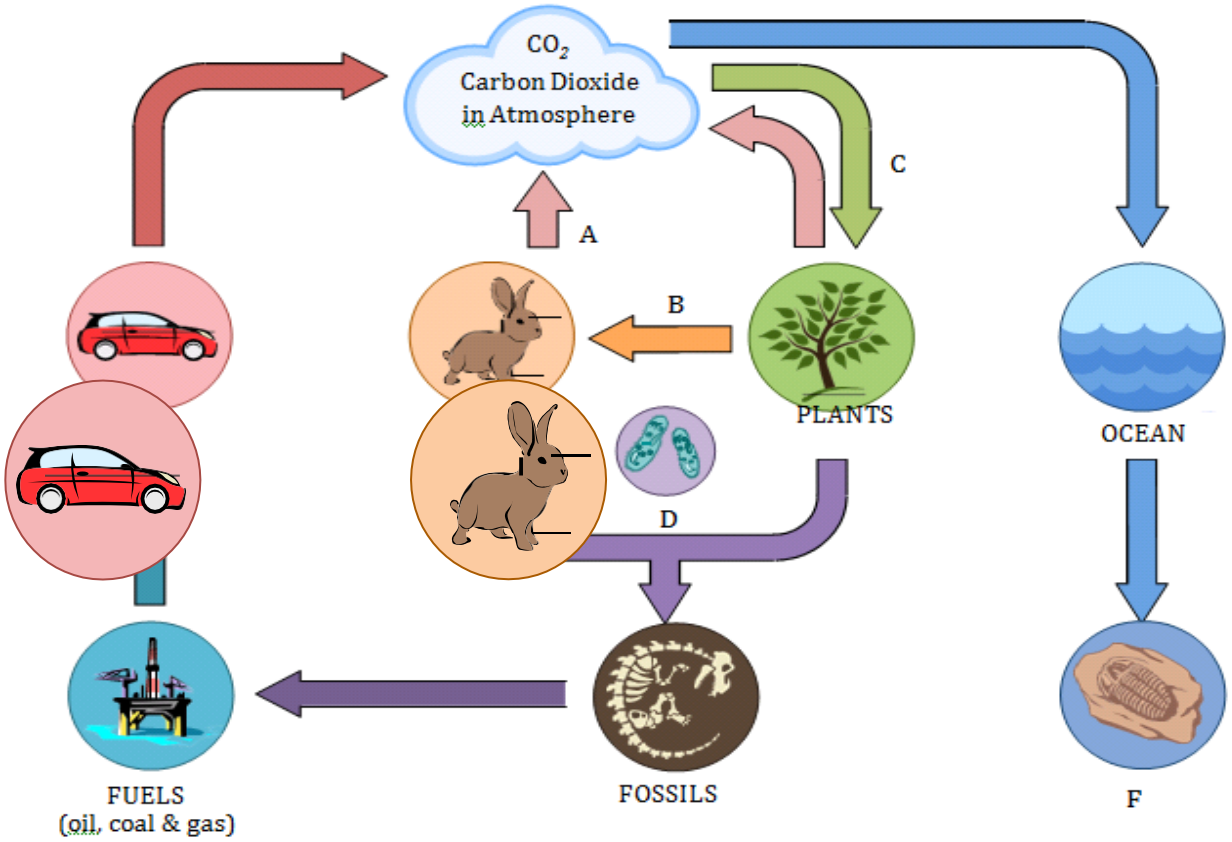
IB DP YEAR – I (2020-22)-BIOLOGY –HL
UNIT- 4 – ECOLOGY
SUB-UNIT-4.3- CARBON CYCLE
WORK SHEET- 1 - DATE – 24.6.20
SUBMISSION DATE OF HOME ASSIGNMENT– 25.6.20

Carbon Exchange

Q1) Label the diagram of the carbon cycle to show the processes involved



A …… B ……

C …… D ……

E …… F ……

Q2) Do data-based question given on page 227 of course book.

Q4) ***Name*** *three processes that release carbon dioxide into the atmosphere.*

1. ***Name*** *three process which move carbon from one reservoir to another, apart from to and from the atmosphere.*

2. ***Describe*** *the movement of carbon that would happen very quickly (in days) between two or more reservoirs. Include the reservoirs, the processes and the forms of carbon.*
3. *A Carbon Sink is a reservoir which absorbs more carbon than it releases.* ***Suggest*** *two possible carbon sinks.*
4. ***Outline*** *the processes that release carbon dioxide into the atmosphere from the lithosphere (carbonate rocks).*
5. *Explain the two main physical / chemical processes by which carbon dioxide molecules in the air move to the cells of phytoplankton in the ocean.*
6. *A Carbon Sink is a reservoir which absorbs more carbon than it releases.* ***Suggest*** *how carbon in the bodies of crustaceans and molluscs is removed from the oceanic food chain to become part of another, slower carbon reservoir.*

IB DP YEAR – I (2020-22)-BIOLOGY –HL
UNIT- 4 – ECOLOGY
SUB-UNIT-4.3- CARBON CYCLE
WORK SHEET- 2 - DATE – 27.6.20
SUBMISSION DATE OF HOME ASSIGNMENT– 30.6.20

Carbon Conversions

Q1) Write a balanced chemical equation for photosynthesis and (aerobic) cell respiration

Photosynthesis: ……

Cell Respiration: ……

Q2) Do data-based questions given on page 222 and 224 of course book.

IB DP YEAR – I (2020-22)-BIOLOGY –HL
UNIT- 4 – ECOLOGY
SUB-UNIT-4.3- CARBON CYCLE
WORK SHEET- 3 - DATE – 1.7.20

SUBMISSION DATE OF HOME ASSIGNMENT– 2.7.20

Q1) Outline the formation of fossil fuels

Peat / Coal:

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Oil / Natural Gas:

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Q2) Describe the combustion of hydrocarbons

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Q3) *Outline how carbon is stored in aquatic ecosystems*

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IB DP YEAR – I (2020-22)-BIOLOGY –HL
UNIT- 4 – ECOLOGY
SUB-UNIT-4.3- CARBON CYCLE
WORK SHEET- 4 - DATE – 3.7.20

SUBMISSION DATE OF HOME ASSIGNMENT– 7.7.20

Q1. Carbon Flux is the flow of carbon from one reservoir to another and its rate is measured in Gigatonnes of Carbon per year (GtC/yr).
***Suggest** the process which has the greatest carbon flux.*

Q2. Estimate the size of the Carbon Flux from the Biosphere to the Atmosphere which is caused by deforestation and the burning of wood. Give your answer in Gigatonnes of Carbon per year (GtC/yr) and explain how you made the estimate.

Q3. Identify three human activities that can trigger carbon fluxes within the atmosphere

1. ……

2. ……

3. ……