



Subject: Grade 11 Life Sciences
Topic: Life Sciences: Term 2 - Exam 1
Total: 162 Marks

Name: _____

Date: _____

Question 1: Multiple Choice

4 marks

The best way to **positively test** for the **gas** released through the **process of photosynthesis** is to do the following:

- | | |
|----------|--|
| A | Bring a lighted splint near a test tube containing the gas. If this gas is present, a popping sound will be heard. |
| B | Bubble the released gas through clear limewater. If this gas is present the limewater will turn milky. |
| C | Put a glowing splint into a test tube containing the gas. If it relights, it indicates the presence of this gas. |
| D | Bring the gas near damp litmus paper. If it is bleached white it indicates the presence of this gas. |

Question 2: Text Input

3 marks

Provide the correct biological term for the following:

The end product of carbohydrate digestion.

Give your answer as ONE word only.

--



Question 3: Text Input

3 marks

The following list contains morphological characteristics of plants. Pick out and **write down the numbers of characteristics** that belong only to **Dicotyledonous plants**.

- 1) Adventitious roots
- 2) Leaves have net venation
- 3) Ovary has two locules
- 4) Has one seed cotyledon
- 5) It has no cambium
- 6) Floral parts in multiples of 4 or 5
- 7) A calyx and corolla can be distinguished

Write the numbers in **ascending order** and separate your numbers by using commas:

--

Question 4: Please Fill In The Blanks

4 marks

Protists are living organisms, classified under the Kingdom Protista.

The Protista include **animal-like**, unicellular, heterotrophic organisms called (1) , **plant-like**, autotrophic organisms like (2) and **fungus-like** organisms like slime moulds and water moulds.

Possible Answers: bacteria | algae | fungi | virusses | plantae | protozoa

1	
---	--

2	
---	--

Question 5: True/False

2 marks

More than 50%, but not yet 75% of the **world's fish sources** are already depleted.

TRUE

FALSE

Question 6: Multiple Choice

4 marks

Which of the following is **NOT PART** of the "**first line of defence**", which is the **natural immune system** of the animal body?

- | | |
|----------|---|
| A | Mouth getting dry to prevent micro-organisms from entering the mucous membrane. |
| B | Sneezing |
| C | Coughing |
| D | Excretion of mucous and tears |
-

Question 7: Please Fill In The Blanks

4 marks

The primary function of **photosynthesis** is to convert (1) energy into (2) energy.

Possible Answers: potential | chemical | sustainable | non-renewable | light | kinetic | green | organic

1		2	
----------	--	----------	--

Question 8: Text Input

3 marks

AIDS is a disease caused by a virus, known as the virus.

--

Question 9: Text Input

3 marks

In the endoplasm of *Amoeba proteus* there are ... **vacuoles** that help in the **excretion of waste** and maintaining the **osmotic equilibrium**.

--

Question 10: Please Fill In The Blanks

12 marks

Complete the following sentences by selecting the correct missing term:

Cellular respiration is a process in which (1) is broken down to create (2) .

Aerobic respiration occurs in the (3) of oxygen and produces a (4) amount of energy molecules.

Anaerobic respiration occurs in the (5) of oxygen and produces a (6) amount of energy molecules.

Possible Answers: ATP | glucose | presence | absence | small | large

1	
3	
5	

2	
4	
6	

Question 11: Multiple Choice

4 marks

Which of the following is NOT a potential consequence of bulimia?

- | | |
|----------|------------------------|
| A | Tearing of the stomach |
| B | Tooth decay |
| C | Blindness |
| D | Extreme dehydration |

Question 12: Please Fill In The Blanks

10 marks

The **first antibiotic** was (1) and it was **discovered by** (2) in 1928. Antibiotics can destroy the bacterium's cell wall and/or cell (3), **causing the cell contents to leak out**, or it can inhibit the metabolism of the bacterium cell by e.g. inhibiting (4) synthesis which will mean that **no enzymes** will be produced. As a result of **natural selection**, bacteria can develop a (5) to antibiotics.

Possible Answers: paracetamol | Louis Pasteur | penicillin | Alexander Fleming | protein | lipid | membrane | resistance | Robert Koch

1	
3	
5	

2	
4	

Question 13: Multiple Choice

4 marks

Which of the following is NOT a function associated with the liver?

- | | |
|----------|--|
| A | Conversion of glucose to glycogen. |
| B | The storage of vitamins A, D and B12. |
| C | Deamination of excess amino acids. |
| D | The secretion of enzymes to assist with digestion. |
-

Question 14: Multiple Choice

4 marks

Which of the following disorders is caused by hard calcium granules forming in the pelvic region of the kidney?

- | | |
|----------|---------------|
| A | Kidney stones |
| B | Bilharzia |
| C | Dialysis |
| D | Gall stones |
-

Question 15: Please Fill In The Blanks

4 marks

The body shape of animals in the phylum **Porifera** is (1) , whereas those within the phylum **Cnidaria** are (2) .

Possible Answers: radial-symmetrical | asymmetrical | bilateral symmetrical

1		2	
----------	--	----------	--

Question 16: Please Fill In The Blanks

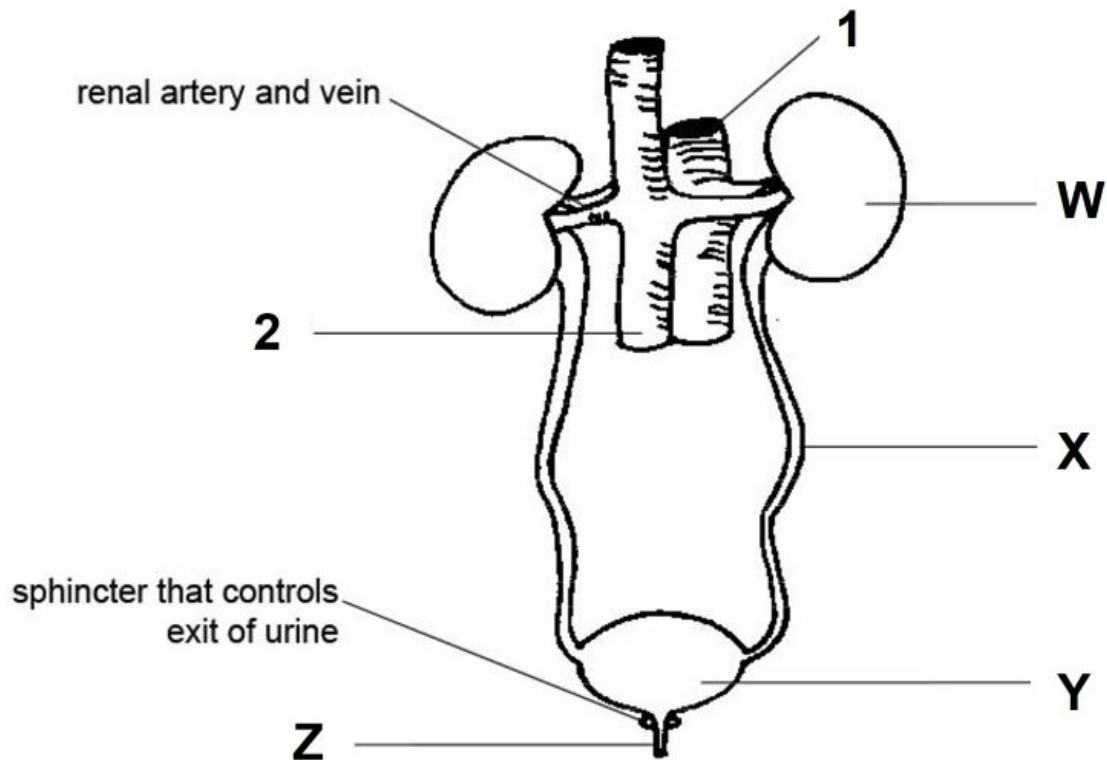
4 marks

Bacteria can develop a **resistance against antibiotics** as part of an evolutionary process which is based on (1) . It is through (2) that bacteria obtains the **ability to survive** doses of antibiotics that previously would have been deadly.

Possible Answers: adaptive survival | cross breeding | selective reproduction | mutations | evasive tactics | environmental pressure | natural selection

1		2	
----------	--	----------	--

This image refers to question: 17



Question 17: Please Fill In The Blanks

12 marks

Match the letters on the diagram of the urinary system to the correct label:

W - (1)

X - (2)

Y - (3)

Z - (4)

There are two main blood vessels shown in the diagram. Number 1 (where unfiltered blood is entering structure W) represents the (5) and number 2 (where filtered blood is leaving structure W) represents the (6) .

Possible Answers: Bladder | Ureter | Urethra | Kidney | vena cava | aorta

1	
3	
5	

2	
4	
6	

Question 18: Multiple Choice

4 marks

Which of the following statements is **not true** for the Protista Kingdom?

- | | |
|----------|---|
| A | Protists are simpler organisms than plants, animals or fungi. |
| B | Protists are prokaryotes with no true cell nucleus. |
| C | Most protists produce asexually, but there are some that can reproduce sexually. |
| D | Some protists are autotrophs and can photosynthesise, whereas others are heterotrophic. |
-

Question 19: Multiple Choice

4 marks

Which of the following is **not** a **layer that could surround the bacterium** cell?

- | | |
|----------|-----------------|
| A | Cell membrane |
| B | Slimy capsule |
| C | Cell wall |
| D | Protein capsule |
-

Question 20: True/False

2 marks

Pteridophytes are the first type of plant that evolved in such a way that the sperm cells do not need water to reach an egg cell.

TRUE

FALSE

Question 21: Text Input

3 marks

Another name for an animal's **body cavity** is the

--

Question 22: Text Input

3 marks

This molecule delivers energy to places within the cell where energy-consuming activities are taking place.

--

Question 23: Multiple Choice

4 marks

Some members of the phylum Arthropoda **cause diseases in humans**. Some are ectoparasites and others act as vectors (they carry the pathogen which causes the illness).

Which of the following statements are TRUE?

- | | |
|----------|--|
| A | Sleeping sickness is caused by the Plasmodium parasite which is spread by the tsetse fly. |
| B | Cholera is caused by the bacterium Vibrio cholera. The bacteria occurs in the faeces of infected humans and there are many flies in areas of poor sanitation. The disease is transmitted by infected meat. |
| C | Tick bite fever is a disease that humans get when they are bit by a wild animal infected by the bacterium. |
| D | Some Anopheles mosquitos can act as vector to carry and transmit the Plasmodium parasite from an infected person to another. |
-

Question 24: True/False

2 marks

Escherichia coli lives in **mutualism** with humans.

TRUE	FALSE
------	-------

Question 25: True/False

2 marks

Vegan and vegetarian are not the same type of diet.

TRUE	FALSE
------	-------

Question 26: True/False

2 marks

Sporangia are hyphae that **carry the sporangiophores** which eventually release the **spores**.

TRUE	FALSE
------	-------

Question 27: True/False

2 marks

The renal artery carries blood that is high in nitrogenous waste.

TRUE	FALSE
------	-------

Question 28: Please Fill In The Blanks

2 marks

In the alteration of generations:

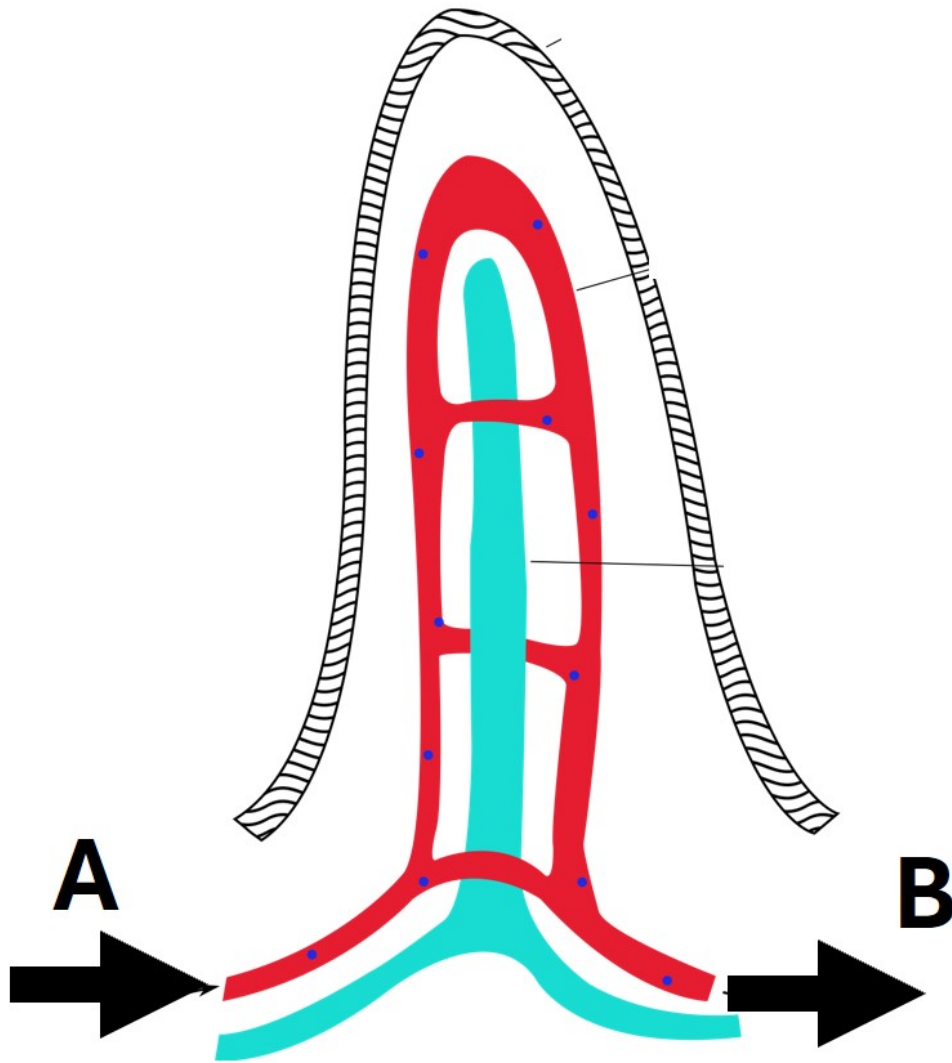
After meiosis takes place, spores are formed which give rise to the (1) generation of the plant, whereas the gametes produced fuse through the process of fertilization to form the (2) generation of the plant.

Possible Answers: gametophyte | sporophyte

1	
----------	--

2	
----------	--

This image refers to question: 29



Question 29: True/False

2 marks

Analyse the image of a villus shown here. Blood is flowing into the villus at A, and flowing out of the villus at B.

The blood at point B has a higher concentration of glucose and amino acids than at point A.

TRUE

FALSE

Question 30: Please Fill In The Blanks

10 marks

A person is suffering from gall stones, a condition that can cause the gall bladder duct that leads to the small intestine to be blocked. This will disrupt the process of digestion in the following ways:

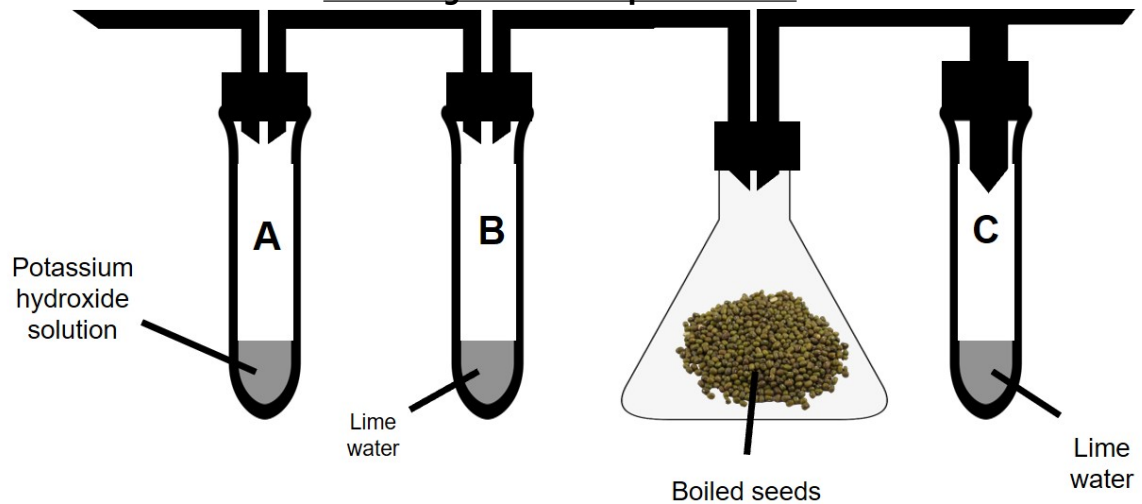
- a) The secretion of (1) into the (2) will not occur. Therefore, no fats will be (3) .
- b) The (4) stomach juices will not be neutralised.
- c) This will cause the enzymes secreted by the (5) to denature and not perform the final breakdown of food.

Possible Answers: jejunum | bile | duodenum | alkaline | acidic | pancreas | emulsified

1	
3	
5	

2	
4	

This image refers to question: 31



Question 31: True/False

2 marks

Refer to the image of the experiment set up by a student.

- Air is first pumped into test tube A.
- Test tube A contains potassium hydroxide which is used to absorb carbon dioxide from the air pumped in.
- Test tube B contains lime water.
- The triangular flask contains seeds that have been boiled in very hot water.
- Test tube C contains lime water.
- The gas will leave out of the tube from test tube C.

Based on this experimental set up, is the following statement true or false?

The lime water in test tube C will turn milky white.

TRUE

FALSE

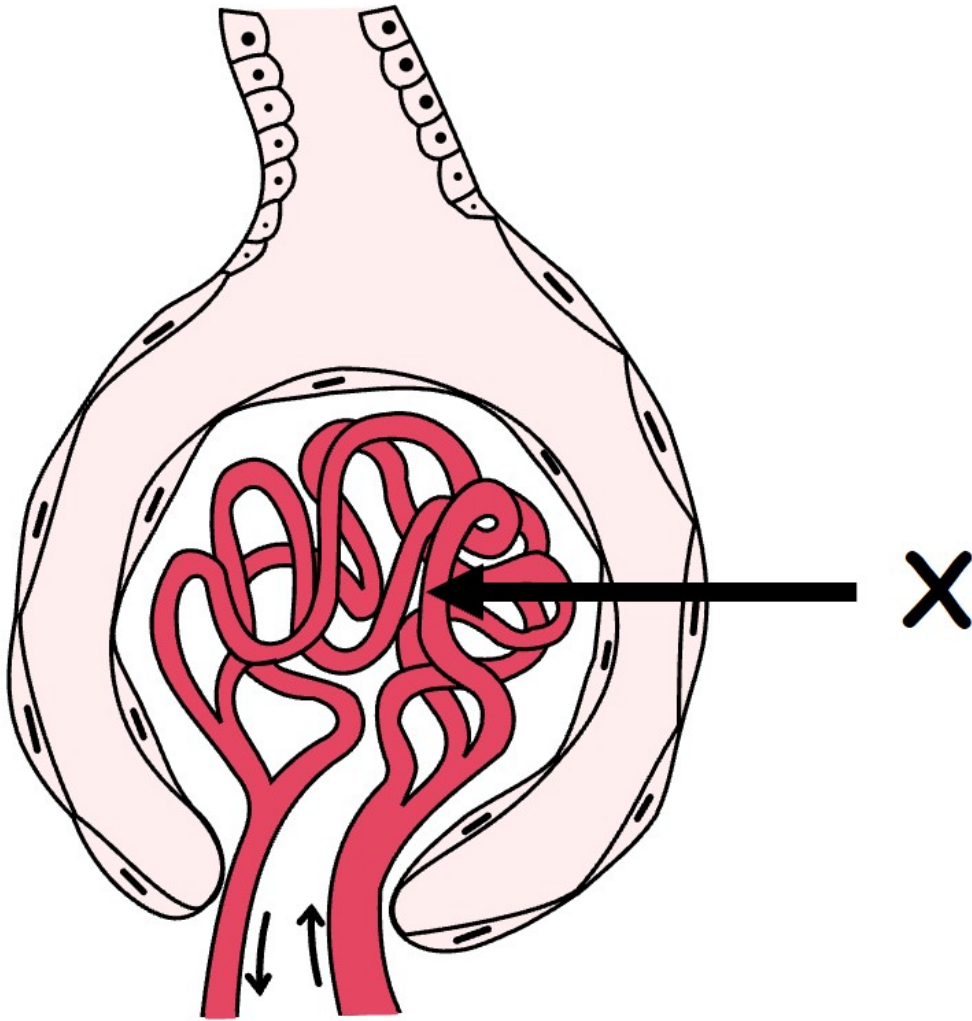
Question 32: Text Input

4 marks

When pathogens **get past the barriers** of the **natural immunity** and penetrates the human body, the **first response** is usually and

Give the two words, divided by a comma.

This image refers to question: 33



Question 33: Text Input

3 marks

Provide the correct biological term for Label X in the diagram.

Give your answer as ONE word only.

Question 34: Please Fill In The Blanks

10 marks

Place the statements given in the correct order to explain how insulin resistance leads to Type 2 diabetes:

1. (1) .

2. (2) .

3. (3) .

4. (4) .

5. (5) .

Possible Answers: Over time, the body's ability to produce extra insulin decreases | The cells begin to use insulin less effectively | The pancreas tries to compensate by secreting more insulin | The blood glucose remains high | This results in type 2 diabetes

1	
3	
5	

2	
4	

Question 35: Text Input

3 marks

Which term is used to describe all the chemical processes that occur in an organism which are controlled by enzymes?

Give ONE word for your answer.

Question 36: Text Input

3 marks

Name the organelle in which aerobic respiration will take place in animal and plant cells.

Give your answer as ONE word only.

Question 37: True/False

2 marks

Natural and acquired immunity can each be divided into **active and passive** ways in which the immunity have been obtained.

Question 38: Text Input

3 marks

Provide the correct biological term for the ability of an organism to maintain constant internal conditions despite changes in its environment.

Question 39: True/False

2 marks

Photosynthesis has a **light phase and a dark phase**. The light phase occurs during the day and the dark phase during the night.

This image refers to question: 40

Answer YES or NO to complete the following table with characteristics that belong to the different groups of plants

	Bryophytes	Pteridophytes	Gymnosperms	Angiosperms
Vascular tissue	A	B	C	D
Spores	E	F	G	H
Seeds	I	J	K	L
Fruit	M	N	O	P
Dependence on water for fertilization	Q	R	S	T

Question 40: Multiple Choice

4 marks

Refer to the table.

Which characteristic is present in both bryophytes and pteridophytes?

- A** Vascular tissue
- B** Spores
- C** Seeds
- D** Fruit

Total: 162 Marks