



Auxilio
DISTANCE EDUCATION

GRADE 11

TERM 2

LIFE SCIENCE

JUNE EXAM MEMORANDUM

Time : 150 minutes

Total Marks : 150

Date : 21 May 2019

Examiner : Miss J Janse van Rensburg

SECTION A**QUESTION 1**

- 1.1.1. C ✓✓
- 1.1.2. D ✓✓
- 1.1.3. A ✓✓
- 1.1.4. A ✓✓
- 1.1.5. A ✓✓
- 1.1.6. D ✓✓
- 1.1.7. C ✓✓
- 1.1.8. B ✓✓
- 1.1.9. B ✓✓
- 1.1.10. A ✓✓

[20]**QUESTION 1.2**

- 1.2.1. Natural immunity ✓
- 1.2.2. Lymphocytes ✓
- 1.2.3. Asymmetry ✓
- 1.2.4. Mesoglea ✓
- 1.2.5. Chlorophyll ✓
- 1.2.6. Dark phase ✓
- 1.2.7. ATP ✓
- 1.2.8. Homeostasis ✓
- 1.2.9. Peristalsis ✓
- 1.2.10. Gall ✓

[10]**QUESTION 1.3**

- 1.3.1. Only B ✓✓
- 1.3.2. Both A and B ✓✓
- 1.3.3. Both A and B ✓✓
- 1.3.4. Only B ✓✓
- 1.3.5. Both A and B ✓✓

[10]

QUESTION 1.4

- 1.4.1. A – Stigma ✓
B – Style ✓
G. – Ovule ✓
I. – Flower ✓

(4)

- 1.4.2. It has flowers to attract the pollinators ✓, the anthers are also not big and hangs loose, and the stigma isn't feathery. ✓

(2)

- 1.4.3. The pistil (gynoecium) ✓

(1)

- 1.4.4. The petals (I) ✓ and the stamens (J) ✓. Their functions are completed and the plant saves energy by getting rid of them. ✓

(3)

[10]**TOTAL SECTION A: 50**

SECTION B**QUESTION 2****2.1**

2.1.1. A.– Is a hydra, ✓ because it has a long, radial symmetry body with tentacles ✓
B – Is a flatworm (planaria), ✓ because it has a flat, bilateral symmetry leaf-like body ✓ (4)

2.1.2. A. – Hydra ✓
B. – Planaria ✓
C. – Planaria ✓
D. – Planaria ✓
E. - Hydra ✓ (5)

2.1.3. Platyhelminthes developed later than Cnidaria. ✓ Two changes in body structures that is shown is bilateral symmetry and three germ layers (triploblastic). ✓ (3)

2.1.4. This arrangement organization lets the animal be aware of everything in the direct environment, ✓ eg.. The presence of food or danger. ✓ It can react of a stimulus in any direction. In water, food and predators can approach from any direction. . ✓ (3)

[15]**2.2**

2.2.1. A monocotyledon plant has one seed leaf ✓ in each seed, whereas the dicotyledon has two. ✓ (2)

2.2.2. It has no cuticula to protect them against dehydration ✓
It has no vascular tissue to support himself in the ground ✓
The gametophyte is dominant, and the sperms still needs water to swim. ✓ (3)

2.2.3. It is situated in a very cold country ✓ which is good for inhibitory germination. ✓ It's highly protected against any natural disasters or attacks ✓. It's distant but still accessible. (✓) (3)

2.2.4. It is a fruit ✓ because it is situated out of a swollen ovary. ✓ (2)

[10]

QUESTION 3**3.1.**

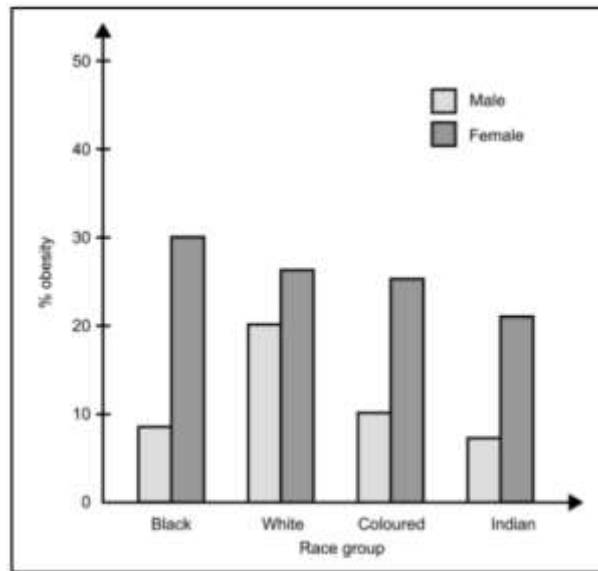
- 3.1.1. The tempo of photosynthesis has increased by the first one, ✓ because of the increased light intensity. The tempo of photosynthesis has flattened, eventually, and stayed the same even if the light intensity has increased again. ✓ (2)
- 3.1.2. The tempo of photosynthesis has flattened because other factors like the concentration of carbon dioxide ✓ is limited. ✓ (2)
- 3.1.3. The pelargonium with the green leaves had more chlorophyll ✓ and could absorb more sun energy than the pelargonium with the multicolored leaves. ✓ (2)
- 3.1.4. Independent variable is the light intensity ✓ and the variety in pelargonium ✓
Dependent variables is the tempo of photosynthesis ✓. (3)
- 3.1.5. The three controlled variables were the same type of plant ✓ (both pelargonium), the same size ✓, and same amount of leaves ✓. (3)
- [12]**

3.2.

- 3.2.1. B – Esophagus ✓
D – Small intestine ✓
E – Liver ✓
F – Pancreas ✓ (3)
- 3.2.2. a) A ✓ (1)
b) D ✓ (1)
c) C, D, E ✓ (3)
- 3.2.3. They are organs that produce substances that are vital for the digestive process, ✓ but they do not form part of the digestive system directly. ✓ (2)
- 3.2.4. Absorption is the process whereby soluble nutrient molecules are taken into the blood. ✓
Assimilation is the use and storage of nutrient molecules in the body. ✓ (2)
- [13]**

3.3

3.3.1.

Mark allocation:

Correct type of graph ✓

Correct label for Y-axis ✓

Correct label for X-axis ✓

Appropriate scale for Y-axis:

*correct values, equal intervals between the values ✓

Plotting of the bars:

- draws all 4 sets of bars correctly (✓✓✓✓)

- draws 3 sets of bars correctly (✓✓✓)

- draws 2 sets of bars correctly (✓✓)

- draws 1 set of bars correctly (✓)

Correct heading ✓

Key provided ✓

(10)

TOTAL SECTION B: 60

SECTION C

4.1

- 4.1.1. Peanut butter ✓ (1)
- 4.1.2. Carrots ✓ (1)
- 4.1.3. Maize porridge ✓ (1)
- 4.1.4. $1000 \checkmark \div 2 \checkmark = 500\text{kJ} \checkmark$ (3)
- 4.1.5. * Two slices of brown bread (60g): $1000 \div 100 \times 60\checkmark = 600\text{kJ}\checkmark$
 * A spoon of peanut butter (10g): $2350 \div 100 \times 10\checkmark = 235\text{kJ}\checkmark$
 * A glass of milk (240g): $143 \div 100 \times 240\checkmark = 343,2\text{kJ}\checkmark$
 * Banana (150g): $384 \div 100 \times 150\checkmark = 576\text{kJ}\checkmark$

Total in meal: **1754,2kJ**✓ (9)

[15]

4.2

- 4.2.1. * Kwashiorkor ✓
 * Marasmus ✓
 * Anorexia ✓
 * Bulimia ✓
 * Obesity ✓ (5)

[5]

Question 5:

5.1. Aerobic respiration can be divided into three stadiums:

- **Glycolysis:** ✓ (compulsory mark)
 - This phase occurs in the cytoplasm of the cell. ✓
 - Glucose is broken down into pyruvic acid. ✓
 - Energy rich hydrogen atoms are released. ✓
 - Hydrogen atoms move into the mitochondria. ✓
 - Hydrogen atoms are used for oxidative phosphorylation. ✓
 - Two ATP-molecules are produced during glycolysis. ✓
(maximum 5)

- **Krebs-cycle:** ✓ (compulsory mark)
 - This phase occurs in the mitochondria of the cell. ✓
 - Pyruvic acid that is produced during glycolysis, are then broken down into energy rich hydrogen atoms and carbon dioxide. ✓
 - Energy rich hydrogen molecules are used during the oxidative phosphorylation phase. ✓
 - Carbon dioxide are released as a gas during exhalation. ✓
(maximum 4)

- **Oxidative phosphorylation:** ✓ (compulsory mark)
 - This stage occurs in the mitochondria. ✓
 - Energy of the hydrogen atoms are used to form energy rich ATP. ✓
 - Hydrogen atoms loses energy and bind to oxygen to form water. ✓
 - Water is released as vapor through exhalation or secreted by the kidneys. ✓
 - One glucose molecule produces 38 ATP-molecules. ✓
(maximum 5)

This energy can be used for:

- Growth (through complex molecules synthesized by simpler molecules) ✓
- Movement ✓
- Transport of nutrients through cell membrane ✓
(maximum 3)

(17)

Mark allocation for synthesis	
Description	Marks
No attempt	0
Significant gaps in logic and flow of response	1
Insignificant gaps in logic and flow of response	2
Well structured – demonstrate insight and understanding	3

[20]

TOTAL SECTION C: 40

GRAND TOTAL: 150

**BLOOM: COGNITIVE LEVELS / KOGNITIEWE VLAKKE:
LIFE SCIENCES/LEWENSWETENSKAPPE**

Examination Question Enter the question number below Eksamenvraag Tik die vraagnommer in die kolom hieronder	Remembering/ Onthou	Understanding / Begrip	Applying/ Toepassing	Analysing/ Analiseer	Evaluating / Evaluering	Creating / Skepping
	Level/Vlak A: 40% (Low / Laag)	Level/Vlak B : 25% (Middle / Middel)	L/V C: 20%	Level/Vlak D: 15% (High / Hoog)		
	Identify / Identifiseer	Interpret / Interpreteer	Implementing / Implementeer	Organising / Organiseer	Testing / Toetsing	Constructing / Konstruktieer
	Define / Definieer	Classifying / Klassifiseer	Using / Toepas	Structuring / Strukturering	Validating / Bekragtiging	Designing / Ontwerp
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1.1.2	2					
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Total/Totaal	26	5	2	20	7		13									2	10	10	8									
% - QP/VS	40%						24.7%						20%				15.3%											