Education and Sport Development
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NORTH WEST PROVINCE

PROVINCIAL ASSESSMENT MEMO

GRADE 11

ENGLISH FIRST ADDITIONAL LANGUAGE

LIFE SCIENCES
Marking Guideline
JUNE 2017

MARKS: 150

TIME: 2½ hours

This memo consists of 9 pages.

QUESTION 1

1.1.1 D✓✓
1.1.2 D✓✓
1.1.3 A✓✓
1.1.4 B✓✓
1.1.5 B✓✓
1.1.6 B✓✓
1.1.7 A✓✓
1.1.8 D✓✓
1.1.9 A✓✓ (9x2) **(18)**

1.2.1 Spermatophytes✓

1.2.2 Homeostasis✓

1.2.3 Lacteal✓

1.2.4 Through gut. ✓

1.2.5 Pathogen✓

1.2.6 Gametophyte✓

1.2.7 Fermentation/Anaerobic✓ (7x1) (**7)**

1.3.1 Both A and B✓✓
1.3.2 A only✓✓
1.3.3 A only✓✓
1.3.4 None✓✓
1.3.5 Both A and B✓✓ (5x2) **(10)**

1.4.1 Virus. ✓ (1)

1.4.2 A- Protein coat✓
B- Nucleic acid/DNA/RNA✓ (2)

1.4.3 transmitted through close and direct physical contact with infected bodily fluids✓, the most infectious being blood✓, faeces, vomit✓, detected in breast milk, urine and semen✓ Any 2 (2)

1.4.4 Antibiotics are used to kill the bacteria✓ that infect the tissues following weakened immune system by the virus. ✓ (2)

(7)

1.5.1 A-Rhizoid✓

B-Capsule. ✓ (2)

1.5.2 Anchorage✓ and absorption of water and minerals. ✓ (2)

1.5.3 Gametophyte✓ (1)

1.5.4 Spores ✓ (1)

(6)

TOTAL SECTION A: 50

SECTION B

QUESTION 2

2.1.1 (a) Light intensity✓
(b) Number of gas bubbles ✓ (2)

2.1.2 According to the number ✓ of gas bubbles released✓ (2)

2.1.3 30 gas bubbles✓ per minute✓ (2)

2.1.4 Carbon dioxide, ✓ Temperature✓ (2)

(8)

2.2.1

(a) Sponges/ Porifera✓✓ (2)

(b) Sponges ✓and jellyfish✓ (2)

(c) Snails (Mollusca)✓ and Arthropoda✓ (2)

(d) Insects✓, millipedes✓ and crustaceans✓ (3)

(e) Fish✓ (1)

(f) Birds✓ (1)

2.2.2 Marsupials✓ (1)

2.2.3 Feathers✓ (1)

2.2.4 Reptiles✓ and Mammals✓ (2)

2.2.5 Organs✓, nervous system✓, vertebrae✓, jaws✓, fingers and toes✓, hair✓
Any 4 (4)

(19)

2.3.1 A-Bronchiole ✓

B- Alveolus ✓ (2)

2.3.2 Large surface area (due to many alveoli), ✓
transport system (many blood vessels) ✓
Blood vessels are in closed contact✓ with alveoli hence easy gaseous exchange✓
Any two (2)

2.3.3 D has low concentration of oxygen✓ and E has high concentration of oxygen✓ /

OR

D has high carbon dioxide✓ and E has low carbon dioxide ✓ (2)
(6)

2.4.1 A- Arthropoda✓
B – Annelida✓ (2)

2.4.2 C✓

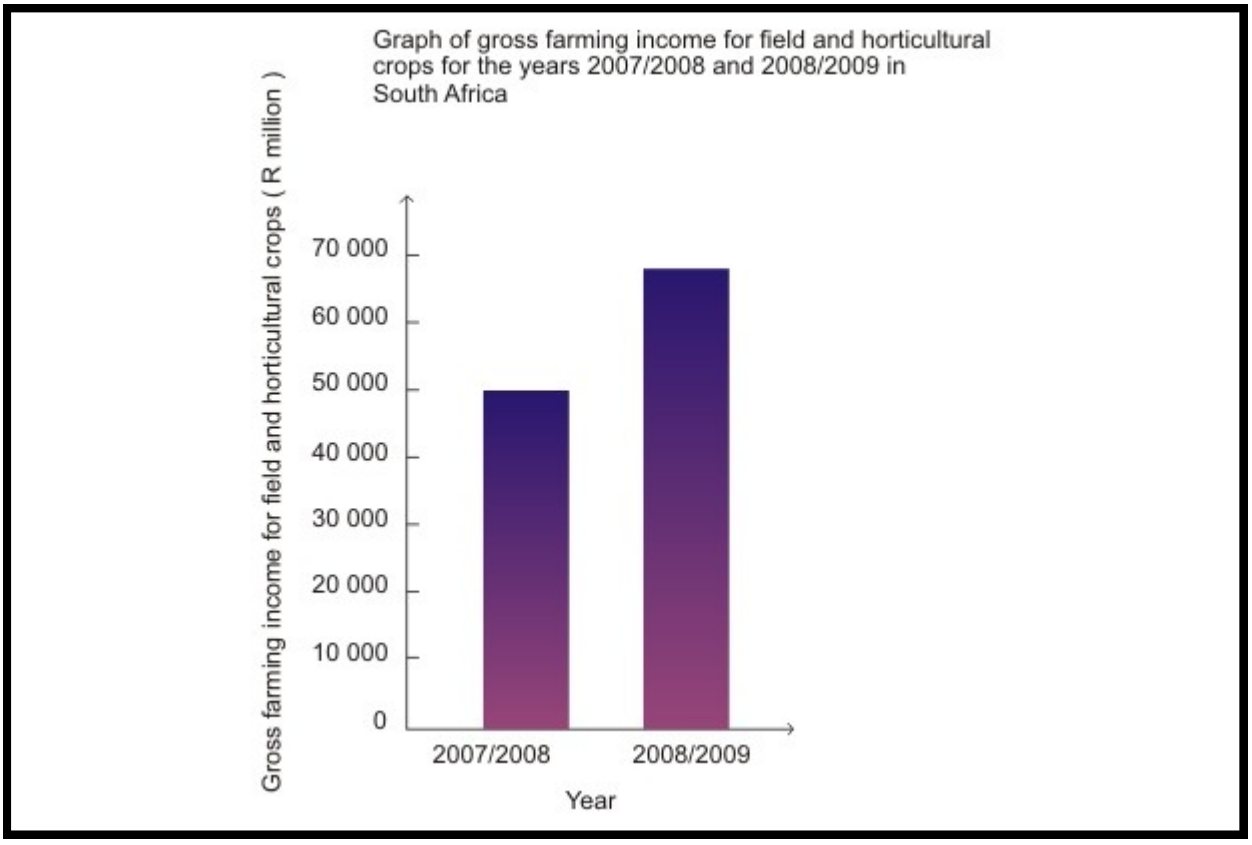
B ✓
A ✓ (3)

2.4.3 The exoskeleton cannot stretch as the animal grows bigger, Moulting has to occur for growth to take place ✓ (2)
(7)

TOTAL FOR QUESTION 2: 40

QUESTION 3

3.1.1 37 800−23 800□= 14 000 □millions of rands (2)



Assessment tool for marking the bar graph

Assessment criteria	**Marks**
Correct type of graph (bar graph)	1
Title of graph present and correct	1
Correct units and Scale for y axis	1
Appropriate scale for x-axis/correct width of bars	1
Plotting the bars 1 bar is drawn 2 bars are drawn correctly	1 mark 2 marks

(6)

3.1.3 (a) Wine. ✓ (1)

(b) It provides employment for many people✓

. It provides income for people✓

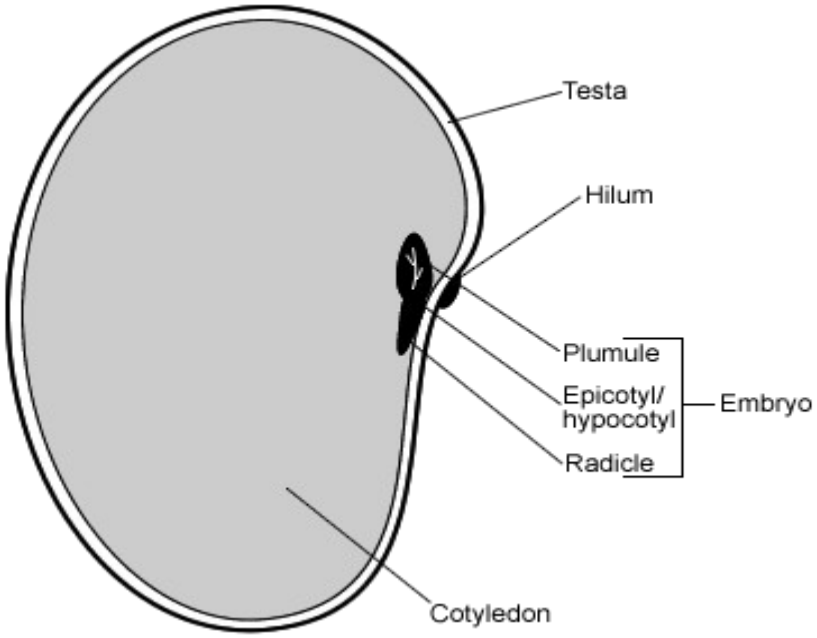
It allows the development of agri-industry for processing of raw products✓

It brings in foreign currency into the country/foreign exchange. ✓

ANY (2)

3.1.4 a) sunflower ✓ (1)

(b) **BEAN SEED**



Heading	✓
Correct sketch	✓
Any 2 labels	✓✓

(4)

(16)

3.2.1 carbohydrate ✓ (1)

3.2.2 Source of energy✓/stored energy (1)

3.2.3 For people on a calorie-controlled diet✓ OR who are allergic to a specific food✓ OR who have specific dietary preferences e.g. vegans ✓ ANY 2 (2)

(4)

Aerobic	Anaerobic
More energy produced a net of 36 ATP✓	Less energy produced a net of 2 ATP✓
Oxygen needed✓	Oxygen not needed✓
Glucose completely broken down into CO_2 and H_2O✓	Glucose incompletely broken down into lactic acid and ethanol

	and CO_2 ✓

✓ for the table **(7)**

3.4.1 Sterile means no micro-organisms are present✓/ all micro-organisms have been killed✓ (1)

3.4.2 Microbes✓ are found on human hair✓ **OR** Microbes✓ are not found on human hair✓. (2)

3.4.3 30°C. ✓ (1)

3.4.4 This is closest to the optimum temperature for growth of bacteria✓✓ (2)
(6)

3.5.1 The flowers with petals✓ attracted more insects for pollination than the flowers without petals. ✓
OR
The flowers without petals ✓may not have attracted insects therefore less pollination.✓ (2)

3.5.2 Some of the pollen tubes that developed were from the same flower/self-pollination occurred✓ and only make little growth into the style/not all pollen grains make it to the ovary/does not fertilise the ovule. ✓ (2)

3.5.3 Repeat the investigation and use the average ✓
Increasing the size of the sample✓
Use the same size flowers✓
Use the same colour flowers✓
Use the flowers of the same apple tree✓
Ensure that all the flowers are pollen-free at the beginning of the investigation✓
Use the same number of flowers✓
The same number of days for pollination/prevention of pollination/for fertilisation to take place✓ ANY 3 (3)

(7)

TOTAL FOR QUESTION 3: 40

SECTION C

QUESTION 4

Mouth

- **Mechanical digestion** of all food groups in the sandwich. ✓
- teeth break foods down into small bits that you can safely swallow them✓
- Chewing breaks food into smaller pieces and mixes it with saliva. Saliva softens the food and increases surface area for salivary amylase action on starch. ✓
- Before food passes from the mouth and down your oesophagus, salivary amylase, an enzyme in saliva, begins to digest the starch in the bread. ✓
- **That is the start of chemical digestion. ✓**
- The mass of chewed sandwich is called a bolus. ✓ **ANY 5(5)**

Stomach

- the protein in polony and cheese is broken down into small units called peptides by enzymes - pepsins✓
- Pepsin is the active protein-digesting enzyme of the stomach. ✓
- Pepsin acts on protein molecules by breaking the peptide bonds that hold the molecules together. ✓
- The stomach releases acids that create acid environment for best action of pepsin. ✓
- The stomach releases food into the small intestine in a controlled and regulated manner. ✓

ANY 5(5)

Small intestines

- Digestion of protein is completed in the small intestine✓ by the pancreatic enzymes trypsin, chymotrypsin, and carboxypeptidase. ✓
- Fats in cheese and polony are mainly digested in the small intestine. ✓

- The presence of fat in the small intestine produces hormones that stimulate the release of **pancreatic lipase**✓ from the pancreas and **bile**✓ from the liver which helps in the emulsification of fats . ✓
- Lipids, or fat, present in polony and cheese go undigested in your digestive tract until they reach your small intestine, where they meet bile. ✓
- Bile contains bile salts, which act as an emulsifier of lipids✓ This breaks the large fat droplets into smaller droplets that are then easier for the fat-digesting enzyme pancreatic lipase to digest.✓
- Protein and starch digestion is completed in the small intestines where the end products amino acids and glucose are absorbed. ✓
- Lettuce contains fiber, which is good for avoiding constipation , it is not digested✓ and passes through to the colon . ✓

ANY 7 (7)

Content: 17

ASSESSING THE PRESENTATION OF THE ESSAY

Criterion	Elaboration		Mark
Relevance **(R)**	All information provided is relevant to the question	No irrelevant information provided	1
Logical sequence **(L)**	Ideas are arranged in a logical sequence	The process of digestion in the mouth, stomach and small intestine is discussed in the proper order	1
Comprehensive **(C)**	Answered all aspects required by the essay in sufficient detail	All 3 aspects: digestion of carbohydrates, proteins and fats are discussed.	1

Synthesis: (3)

Section C : (20)

GRAND TOTAL: 150