Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2011

AGRICULTURAL SCIENCES P1 MEMORANDUM

MARKS: **150**

This memorandum consists of 6 pages.

ANSWER SHEET AGRICULTURAL SCIENCES P1

NAME AND SURNAME MEMORANDUM

SECTION A

QUESTION 1.1

1.1.1	A	B	C	~~D~~
1.1.2	A	B	C	~~D~~
1.1.3	A	~~B~~	C	D
1.1.4	A	B	~~C~~	D
1.1.5	A	B	~~C~~	D
1.1.6	A	B	C	~~D~~
1.1.7	~~A~~	B	C	D
1.1.8	~~A~~	B	C	D
1.1.9	A	B	~~C~~	D
1.1.10	~~A~~	B	C	D

(10x2) (20)

QUESTION 1.2

	ONLY A	ONLY B	BOTH A and B	None
1.2.1	A	B	~~C~~	D
1.2.2	~~A~~	B	C	D
1.2.3	A	B	C	~~D~~
1.2.4	A	~~B~~	C	D
1.2.5	A	~~B~~	C	D

(5x2) (10)

QUESTION 1.3

1.3.1 Dipeptide √√

1.3.2 Drainage √√

1.3.3 Emulsions √√

1.3.4 O-horizon √√

1.3.5 Capillarity √√

(5x2) (10)

QUESTION 1.4

1.4.1 Ammonia √

1.4.2 Hydrogen √

1.4.3 Southern slope √

1.4.4 Non-homogeneous √

1.4.5 Carbonic √

(5x1) (5)

45

SECTION B

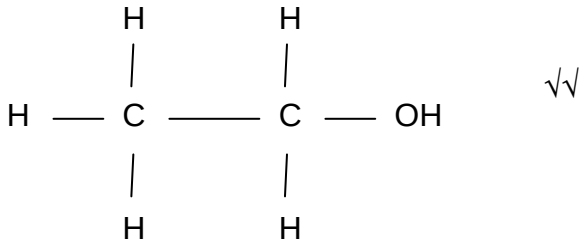
QUESTION 2

2.1 2.1.1 Carbohydrates √ (1)

2.1.2 Pressing √
Fermentation √
Distillation √ (3)

2.1.3 Hydroxyl group / -OH √ (1)

2.1.4 C_2H_5OH √√



√√ (4)

2.1.5 Improve air quality in cities √
Fewer air pollutants √. (Any 1) (1)

2.1.6 Burned just before harvest in order to remove leaves and kill snakes √ (1)

2.2 2.2.1 (a) Soil profile 3 A/C √ (1)
(b) Soil profile 4 A/B/C/R √ (1)
(c) Soil profile 2 A/G/C √ (1)
(d) Soil profile 1 B/C √ (1)

2.2.2 A √√ (2)

2.2.3 A √ (1)

2.2.4 R √ (1)

2.3 2.3.1 A √ (1)

2.3.2 Northern slope receives more direct sunrays. √
Rays are more concentrated at the northern slope than the southern slope. √ (2)

2.3.3 Seeds germinate quicker. √
Warm soils deliver early crops. √
Morning sun has a great influence on the ripening process of crops. √
High temperatures activate soil microbes. √
Soil water will be able to dissolve much more plant nutrients. √(Any 3) (3)

2.4 2.4.1 A – Silt loam √
B – Clay √
C – Loam √ (3)

2.4.2 Soil sample C √ (1)

2.4.3 Since the soil sample is a mixture of sand and clay, it accommodates more reactions taking place in soil √√ (2)

2.4.4 Clay soil is difficult to cultivate due to cohesiveness. √
Water logging occurs very easily √
Air circulation is very slow √
Limit the root growth of plant √
Forming crust √
Difficult to reclaim √
Absorption of water is extremely slow √ (Any 4) (4)

[35]

QUESTION 3

3.1 3.1.1 Platy structure √ (1)

3.1.2 Prismatic structure / columnar √ (1)

3.1.3 Blocky structure (Angular or sub angular) √ (1)

3.1.4 Granular structure √ (1)

3.1.5 Crumb structure √ (1)

3.2 Soil may broken by raindrops. √
Over cultivation can damage the soil structure √
Cultivating when the soil is too wet or too dry √
The structure will deteriorate when the organic content of soil is lowered √
Injudicious cultivation of soil √ (Any 4) (4)

3.3

Substance	pH value	pH categories	
Baking powder	8,4	3.3.1 Alkaline √	(1)
Oranges	3,4	3.3.2 Acidic √	(1)
Pure water	7,0	3.3.3 Neutral √	(1)
Vinegar	2,8	3.3.4 Acidic √	(1)

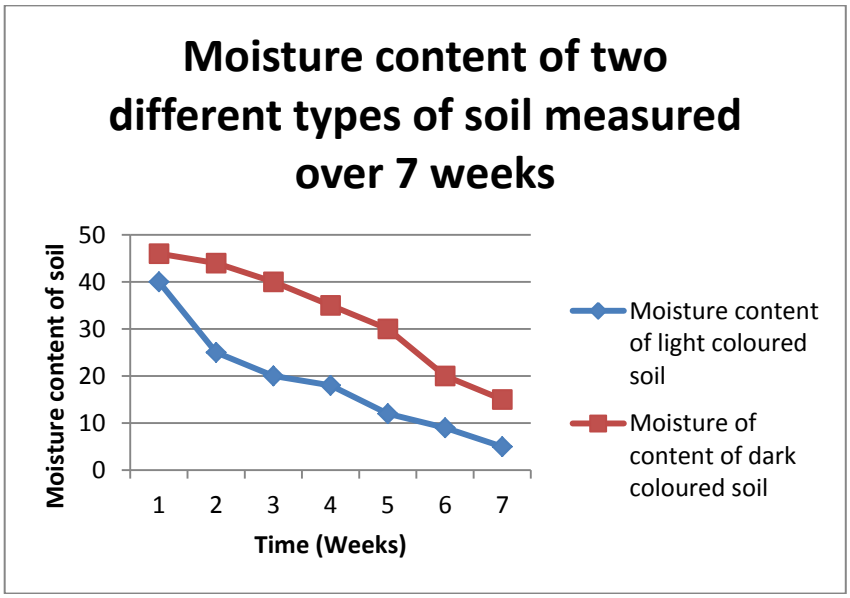
3.3.5 Neutralisation √√ (2)

3.4 3.4.1 Fats are solid √ at normal room temperatures whereas oils are liquids √ (2)

3.4.2 Glycerol √
Fatty acids √ (2)

3.4.3 Obesity √
High cholesterol √
High blood pressure √
Heart attack √
Diabetic √ (Any 3) (3)

3.5 3.5.1



Indicators	Yes	No
Labelling of axes	1	0
Title of graph	1	0
Differentiation between the two graphs	1	0
Correctness of scale	1	0
Proper plotting of graph	1	0
Correct type of graph	1	0

(6)

3.5.2 Light coloured soil √ (1)

3.5.3 A rapid decrease in the percentage of moisture content from week 1 to week 7 (i.e. from 40 mm to 5 mm) for light coloured soil √
Low water retention capacity √
Macro pores allow the infiltration of water √
Seepage of water occurs √ (Any 2) (2)

3.5.4 Water has high heat absorption capacity and dark coloured soil absorbs√ more heat and retains it because of its high water absorption capacity√. Light coloured soil reflects√ the sun rays as a result looses heat very fast because of its low water retention capacity √ (4)

[35]

QUESTION 4

4.1 4.1.1 Dipeptide √ (1)

4.1.2 Glycine √
Cystein √ (2)

4.1.3 Peptide bond √ (2)

4.1.4 Repair worn out tissues √
Enhances reproduction √
Supply heat and energy √
Prevent diseases √
Provides amino acids to the body √
Acts as antibodies √ (Any 4) (4)

4.1.5 Kwashiorkor √ (1)

4.2 Photosynthesis √
Respiration √
Feeding √
Respiration √
Decomposition √
Combustion √ (6)

4.3 4.3.1 Tyndall effects √√ (2)

4.3.2 (a) B √ (1)

(b) A√ (1)

4.3.3 (a) When light passes through a colloid, the particles are large enough to disperse the light and the light can be seen. √ (1)

(b) With the solution, no scatter and light beam cannot be seen as it passes through the solution √ (1)

4.4 A soil form is a particular combination and succession of diagnostic horizon. √
A soil series is lower category of classification system where different forms are subdivided into series. √ (2)

4.5 4.5.1 Improve soil structure √
Infiltration rate will improve √
Soil will be well aerate and well drained √
Fertility will be warmer √
Soil will be warmer √
Texture of soil will improve √ (Any 2) (2)

4.5.2 Transport medium √
Medium for chemical reactions √
Solvent √
Excretion √
Secretion √
Lubricant √
Controls body temperature √ (Any 3) (3)

4.5.3 Fungi √
Bacteria √
Algae √
Protozoa √
Virus √ (Any 3) (3)

4.5.4 Bulk density = $\frac{\text{Mass of soil sample}}{\text{Total volume of sample}}$ √
= $\frac{450\text{ g}}{46\text{ cm}^3}$ √
= 9,8 g/cm^3 **OR** 10 g/cm^3√ (3)
[35]

TOTAL SECTION B: 105

GRAND TOTAL: 150