



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

AGRICULTURAL TECHNOLOGY/LANDBOUTEGNOLOGIE

EXEMPLAR /MODEL 2007

MEMORANDUM

**This memorandum consists of 9 pages.
Hierdie memorandum bestaan uit 9 bladsye.**

Section A

Afdeling A

Question 1

Vraag 1

1.1 A	1.2 C	1.3 A	1.4 C	1.5 B	1.6A	1.7B	1.8A	1.9C	1.10C
1.11 B	1.12A	1.13A	1.14B	1.15B	1.16C	1.17A	1.18B	1.19B	1.20 A

Section B

Afdeling B

Question 1


Vraag 1

1.1.1	Gives a weak concrete √ that is very porous. √	Beton verswak √ en word poreus. √	2
1.1.2	<ul style="list-style-type: none"> ▪ Concrete starts setting after 1 hour and should not be re-mixed after that period. √ ▪ The concrete will loose its strength. √ 	<ul style="list-style-type: none"> ▪ Sement begin na 1 uur set en moet nie na hierdie tydperk weer gemeng word nie. √ ▪ Die beton verloor ook van sy sterkte. √ 	2
1.1.3	(1/4/8) √;	(1/3/6) √; (1/2/4) √	3
1.1.4	<ul style="list-style-type: none"> a) To monitor shrinking during the drying process √ b) To see if there was too much water in it. √ 	<ul style="list-style-type: none"> a) Om die krimpig gedurende droog word proses te monitor. √ b) Om te sien of daar te veel water in mengsel was. √ 	2

1.2.1	a) 9 √	b) 10 √	c) 7 √	(3)
1.2.2	Outside wall is 1-brick wall √ or 220mm √ Inside wall is ½ -brick wall √ or 110mm √	Buite muur is 1 steen- muur √ of 220mm √ Binne muur is ½ steen- muur √ of 110mm √	(4)	
1.2.3	It ensures distribution of the load of the whole wall or give strength and stability. √	Dit verseker 'n las verspreiding oor die hele muur of gee sterkte en stabiliteit √	(1)	
1.2.4	The cavity reduces noise √ and let water flow down to the damp proof course that will direct it to the outside- wall to the interior is not moist √	Die holte verminder klank intensiteit √ Lei water vanaf muur na onder tot die vogdigting, wat dit weer na buite lei- muur nie vogtig na binne. √	(2)	

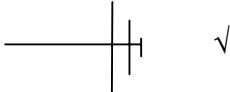
1.3.1	<ul style="list-style-type: none"> A. Inlet pipe. √ B. Thermostat. √ C. Element. √ 	<ul style="list-style-type: none"> D. Inlaat pyp. √ E. Termostaat. √ F. Element. √ 	(3)
1.3.2	Cold water flows in at the bottom of the tank √; then heated by the element. √ The hot water rises up to the top of the tank where it can exit the tank through the top pipe that provides hot water. √	Koue water kom aan die onderkant van die geiser in √ en word dan deur die element verwarm. √ Die warm water styg op na die bokant van die geiser van waar dit afgetap word. √	(3)
1.3.3	<ul style="list-style-type: none"> a) Galvanised of Polyprop pipes √ b) Copper of high pressure polyprop √ 	<ul style="list-style-type: none"> a) versinkte of polyprop pype √ b) Koper of hoë druk polyprop pyp √ 	(2)

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1.4	Marks allocated for: Proportion (length, breadth, height)/ Dimension ✓ Neatness ✓, Sturdiness ✓ Ramp ✓ & wheels ✓	Punte as volg: Verhouding tussen lengte, breedte en hoogte ✓ Netheid ✓ Stewigheid ✓ helling ✓ en wiele ✓	(6)
			
1.5	a) Welded mesh ✓ (any three) b) Chain link fencing ✓ c) Tension mesh ✓ * Hexagonal wire	c) Welded mesh ✓ (enige drie) d) Lemmetjiesdraad ✓ e) Tension mesh ✓ * Agthoekige draad	(3)

QUESTION 2

VRAAG 2

2.1.1	Transformer ✓. 380 volts. ✓	(2)
2.1.2	No ✓	Nee ✓ (1)
2.1.3	4 Core wire. ✓	4 koord (aar) elektriese draad ✓ (1)
2.1.4	Lightning arrestor ✓	Weerlig afleier. ✓ (1)
2.1.5		✓ (1)

2.2.1	<ul style="list-style-type: none"> ▪ When electricity flows through a wire, the wire resists the flow of current. ✓ ▪ This resistance to the current tends to heat up the wire. ✓ ▪ High current drawn due to load increase ✓ ▪ and wires made of high resistance materials. ✓ 	<ul style="list-style-type: none"> ▪ Wanneer `n elektriese stroom deur `n geleier vloei is daar weerstand ✓. ▪ Weerstand teen stroom veroorsaak dat die draad warm word ✓ ▪ indien die stroom baie hoog is agv groter las . ✓ ▪ Drade word van hoë weerstands metale gemaak. ✓ 	(4)
2.2.2	<ul style="list-style-type: none"> ▪ Current too high for the thickness of the wire. ✓ ▪ short circuit ✓ 	<ul style="list-style-type: none"> ▪ Die stroom is te hoog vir die dikte van die draad. ✓ ▪ Wanneer `n kortsluiting ontstaan. ✓ 	(2)
2.2.3	<ul style="list-style-type: none"> ▪ Electric heaters. ✓ (any two) ▪ Incubator. ✓ ▪ driers 	<ul style="list-style-type: none"> ▪ Elektriese verwarmers. ✓ (enige 2) ▪ Broeimasjiene. ✓ ▪ Droëers ens 	(2)

2.3.1	<ul style="list-style-type: none"> ▪ 2x strands of wire per length ✓ ▪ lights and light fittings ✓ ▪ distribution board ✓ ▪ and switches. ✓ <p>(no plugs needed)</p>	<ul style="list-style-type: none"> ▪ 2x elektriese draad per lengte, ✓ ▪ ligte en ligtoebehore ✓ ▪ verdeelbord ✓ ▪ skakelaars. ✓ ▪ (geen muurproppe nodig) 	(4)
2.3.2	<ul style="list-style-type: none"> ▪ Wires should not be open ✓ or ▪ Not Installed near water (or metal without protection) ✓ 	<ul style="list-style-type: none"> ▪ Drade moet nie oop wees nie ✓ ▪ Nie naby water (of op metaal insulasie) installer word nie 	(2)

QUESTION 3

VRAAG 3

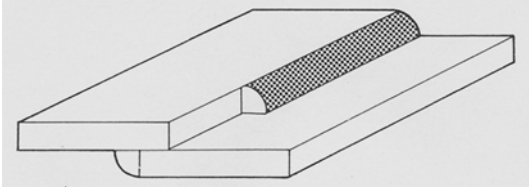
3.1.1	To harden certain parts to a certain extend, without becoming brittle. ✓	Om sekere dele hard te maak sonder dat dit bros word. ✓	(1)
3.1.2	<ul style="list-style-type: none"> ▪ Steel is tempered by reheating it, ✓ ▪ to a suitable temperature (dull red) ✓ ▪ then submerging into oil, to cool down. ✓ 	<ul style="list-style-type: none"> ▪ Staal word getemper deur te verhit ✓ ▪ tot dof rooi ✓ ▪ en daarna in olie af te koel. ✓ 	(3)
3.1.3	Fire bricks ✓	Vuurstene ✓	(1)

3.2.1	<ul style="list-style-type: none"> a) Tap ✓ b) Die ✓ c) Thread cutting nut ✓ 	<ul style="list-style-type: none"> a) Draadsny tap ✓ b) Sny blok of die ✓ c) Draadsny moer ✓ 	(3)
3.2.2	<ul style="list-style-type: none"> ▪ Rivets. ✓ ▪ Welding. ✓ 	<ul style="list-style-type: none"> ▪ klinknaels. ✓ ▪ sweis. ✓ 	(2)

3.3.1	<ul style="list-style-type: none"> ▪ When it is compressed it releases a strong flow of oxygen ✓ ▪ which increases the temperature highly ▪ that will melt the metal away in order to cut the metal. ✓ 	<ul style="list-style-type: none"> ▪ Wanneer die hefboom gedruk word stel dit 'n sterk stroom suurstof vry ✓ ▪ wat die temperatuur baie verhoog, ▪ sodat die metal gesmelt kan word en die metaal dus sny. ✓ 	(2)
3.3.2	Left hand thread. ✓	Linksom draad (anti-kloksgewys) ✓	(1)
3.3.3	<ul style="list-style-type: none"> ▪ Cutting nozzle. ✓ ▪ The function is to direct the flame to the precise spot where the cut is made. ✓ 	<ul style="list-style-type: none"> ▪ Snybrander. ✓ ▪ Die funksie is om die vlam op die presiese plek toe te spits waar gesny moet word. ✓ 	(2)

3.4.1	B	1600 °C or 2912 F. ✓	(1)
3.4.2	<ul style="list-style-type: none"> ▪ Just in front of the white flame. At point B. ✓ 	<ul style="list-style-type: none"> ▪ Net voor die wit vlam, by punt B. ✓ 	(1)
3.4.3	Welding. ✓	Sweis. ✓	(1)
3.4.4	<ul style="list-style-type: none"> Neutral flame. ✓ a) Welding of mild steel. ✓ b) Welding of copper. ✓ 	<ul style="list-style-type: none"> Neutrale vlam. ✓ a) Sweising van sagtestaal. ✓ b) Sweising van Koper. ✓ 	(3)

3.5



Correct overlap in drawing ✓,
Correct joint ✓
The sections where you will weld the two pieces together. ✓
Welding symbol. ✓

Korrekte skets met oorslag ✓,
Las ✓,
Dui aan waar jy die las moet sweis. ✓
sweissimbool vir die las ✓

(4)

3.6.1 Welding crater. ✓ Sweiskrater . ✓ (1)

3.6.2 a) Too big a flame or too high arc current. ✓ a) Die boogvlam is te groot maw. (2)
b) Incorrect welding technique. ✓ Booglengte is te lank. ✓
* Too thin electrode. b) Verkeerde sweistegniek. ✓
• Elektrode te dun.

3.6.3 ▪ Protects the molten metal against pollution by the air. ✓ ▪ Dit beskerm die gesmelte metaal teen lug. ✓ (2)
▪ Prevents the weld from cooling too fast. ✓ ▪ Dit verhoed dat die metal te vinnig afkoel. ✓
▪ Brings about an even weld. ▪ Dit help om 'n gelyke sweislas te bewerkstellig.

3.7.1 ▪ Protect the eyes ✓ against ultra-violet rays from the welding flame. ✓ Dit beskerm die oë ✓ teen ultra violet strale wat deur die sweisvlam afgegee word. ✓ (2)

3.7.2 ▪ To protect the skin ✓ against heat and ultra violet rays. ✓ Om die vel ✓ teen hitte en ultra violet strale ✓ te beskerm (2)

QUESTION 4

VRAAG 4

4.1.1 Top link. ✓ Boonste stang. ✓ (1)

4.1.2 To keep the shear from braking off when the plough strike a rock ✓ Om te verhoed dat 'n skaar breek wanneer die ploeg 'n harde rots vang, (1)

4.2.1 a) Lubrication. ✓ a) Smering. ✓ (4)
b) Check all bearings, chains and gears. ✓ b) Kontroleer alle koëllaers, kettings en ratte. ✓
c) Check all safety clutches. ✓ c) Kontroleer alle veiligheidskopellaars. ✓
d) Check tyre pressure.. ✓ d) Kontroleer banddrukke. ✓
* Check bolt tension * Kontroleer boutspannings
* Inspect chassis and tyres for damage *
* Sharpen all blades ▪ Kontroleer onderstel en bande vir skade

<p>4.2.2</p> <p>a) Clean the planter properly. ✓ b) Fix broken or damaged parts immediately. ✓ c) Releases the tension on all drive belts. ✓ d) Remove all chains, clean and oil them, and replace them. ✓ e) Dismantle all slip clutches, clean them and reassemble them but do not put the springs under tension. ✓</p> <ul style="list-style-type: none"> • Paint or cover all unpainted areas with a thin layer of grease. • Grease all grease nipples. • Store planter in a dry place under cover. 	<p>a) Maak planter deeglik skoon. ✓ (5) b) Herstel dadelik gebreekte of beskadigde onderdele. ✓ c) Verslap die spanning op die dryf belde. ✓ d) Verwyder alle kettings, maak skoon, olie en plaas terug. ✓ e) Haal gg lip koppellaars uitmekaar, maak skoon en sit parte weer aanmekaar- moet nie vere onder spanning plaas nie ✓</p> <ul style="list-style-type: none"> ▪ Verf nerfaf plekke of smeer met 'n dun laag ghries. ▪ Gries alle ghriesnippels ▪ Stoor planter in 'n droë plek onderdak
<p>4.3.1</p> <p>a) Check if sprayer is not damaged ✓ b) Make sure the calibration of the sprayer is correctly set for the specific type of pesticide. ✓ c) Use gloves when working with poisons. ✓</p> <ul style="list-style-type: none"> • Wear a mask when working with or near applied pesticides. • Discard empty containers safely • One must wash immediately If accidental contact with poisons occur. <p>4.3.2</p> <p>a) Cleaning must be done at a place where the poison will not effect human, animal or plant life. ✓ b) Run clean water through the whole system. ✓ d) Check for blockages on the tank, sprayers, nozzles and pipes. ✓</p>	<p>a) Kontroleer of spuit nie beskadig is nie ✓ (4) b) Kontroleer of die spuit gekalibreer is vir spesifieke onkruidmiddel. ✓ c) Gebruik handskoene as met gifstowwe gewerk word ✓</p> <ul style="list-style-type: none"> ▪ Dra 'n masker naby gebruik van gifstowwe ✓ ▪ Vernietig leë houers veilig ▪ Was onmiddelik na kontak met gifstowwe <p>a) Spuit moet skoongemaak word waar mens dier of omgewing nie vergiftig kan word nie. ✓ (3) b) Spoel hele spuitsistiem deeglik uit. ✓ c) Kontroleer vir verstoppings op die tenk, sproeikoppe en pype ✓</p>
<p>4.4.1 Idler pulley with tension spring. ✓ Function is to keep the slack side ✓ of the fan belt under tension. ✓</p> <p>4.4.2</p> <ul style="list-style-type: none"> • Larger diameter: decrease speed (increase force) ✓✓ • Reduced diameter: increases speed (decreases force) ✓✓ <p>4.4.3</p> <p style="text-align: center;">Formula: $N_a \times D_a = N_g \times D_g$. ✓</p> <p>4.4.4 Turning direction of the driven pulley will change. ✓</p>	<p>Leikatrol met spanningsveer. ✓ (3) Funksie is om die slap kant ✓ van die waaierband onder spanning te plaas. ✓</p> <ul style="list-style-type: none"> • Groter deursnit: verminder spoed of verhoog krag. ✓✓ (4) • Kleiner deursnit: verhoog spoed of verminder krag. ✓✓ <p>Gedrewe katrol sal van rigting verander ✓ (1)</p>

4.5.1	Ignition timing light.	Vonkreëlig (stroboskoop)	(1)
4.5.2	<ul style="list-style-type: none"> a) Engine must run. b) Attach the timing light to high tension lead no 1. c) Remove the vacuum advance mechanism. d) Adjust the idling speed according to specifications. e) Direct the timing light on the ignition timing marks of the engine. f) Loosen the clamp bolt of the distributor. g) Turn the distributor until the timing marks coincide with the manufacturer's instructions. h) Fasten the clamp bolt of the distributor. 	<ul style="list-style-type: none"> a) Enjin moet aangeskakel wees. b) Verbind die reëlig met die hoëspanningsdraad nr1 c) Verwyder die vacuum vervroeger d) Stel die luier spoed volgens spesifikasies e) Rig die reëlig op die vonkreëlings merke op die enjin f) Maak die verdeler se klampbout los g) Draai die verdeler sodat die tydreëlingsmerke volgens vervaardigers se instruksies is. h) Maak die verdeler se klampbout weer vas. 	(6)
4.5.3	<ul style="list-style-type: none"> ▪ Engine backfire. ✓ ▪ Engine is heavy on fuel. ✓ ▪ Engine run unevenly. ✓ 	<ul style="list-style-type: none"> ▪ Enjin terugploff of terugvonk. ✓ ▪ Enjin is swaar op brandstof. ✓ ▪ Enjin hardloop ongelyk. ✓ 	(3)

4.6	<ul style="list-style-type: none"> a) Training. ✓ b) Strict discipline. ✓ a) Supervision. ✓ and others 	<ul style="list-style-type: none"> • Opleiding ✓ • dissipline ✓ • toesig ✓ e.a 	(3)
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QUESTION 5

VRAAG 5

5.1.1	<ul style="list-style-type: none"> a) Make sure that there is enough oil in the gearbox. ✓ b) Lubricate all moving parts. ✓ c) Check and repair structural defects. ✓ d) Make sure all pipes are watertight. ✓ * Check that washers/valves are not corroded and working properly. ✓ * Check if stroke is correctly set. ✓ 	<ul style="list-style-type: none"> i) Kontroleer die olievlak in die ratkas. ✓ j) Smeer alle bewegende dele. ✓ k) Kontroleer en herstel strukturele defekte. ✓ l) Maak seker dat alle pype en laste waterdig is. ✓ ▪ Kontroleer wasters en kleppe vir roes en werking. ✓ ▪ Maak seker dat die slag korrek ingestel is. ✓ 	(6)
5.1.3	This clearance of 2 metres prevents that rocks and mud ✓ are being sucked into the cylinder obstructing ✓ the valves and leather washers. ✓	Die vryhoogte van 2m verhoed dat klip en modder ✓ in die sillinder opgesuig ✓ word – sodat die werking van die kleppe en wasters nie verhoed word nie. ✓	(3)

5.2.1	<ul style="list-style-type: none"> a) Pressure high enough to satisfy needs. ✓ b) Prevent spillage. ✓ c) Joints watertight. ✓ d) Removal of spillage water. ✓ e) Protect all valves. ✓ 	<ul style="list-style-type: none"> a) Genoeg water druk ✓ b) Voorkom oorfloei ✓ c) Waterdigte hegingsplekke ✓ d) Dreinerings van oorfloei water ✓ e) Beskerming van kleppe ✓ 	(5)
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5.2.2	<p>a) Not be too high. ✓ b) : deep. ✓ c) : wide. ✓ d) Build in such a way that animals cannot get their feet into it. ✓</p>	<p>Dimensies moet nie te hoog ✓ Diep ✓ of wyd ✓ wees vir betrokke diere nie. Diere moet nie hul pote in drinkbak kry nie. ✓</p>	(4)
5.2.3	Hemp/Thread tape ✓	Goïing, plastiese maskeerband vir skroefdraad	(1)
5.3	<p>a) Spacing of pipes ✓ b) The diameters of the pipes determine the flow of water. ✓ c) The depths of the pipes determine the draining effect. ✓ d) A slope of 0.2% (20mm on 10m) is needed for effective drainage. ✓</p>	<p>a) Spasiëring van pype ✓ b) Deursnit van pype wat watervloei beïnvloed ✓ c) Diepte van pype bepaal dreinerings effek. ✓ d) 'n Helling van 0,2% (20mm op 10m) moet gehandhaaf word vir effektiewe deïnering. ✓</p>	(4)
5.4.2	External coupling ✓ with galvanised clamps ✓	Eksterne koppelstuk ✓ met versinkte klampe ✓	(2)
5.5.1	Distribute water evenly over large areas ✓	Verprei water eweredig oor groot areas	(1)
5.5.2	<ul style="list-style-type: none"> ▪ Metal: Brass; galvanised iron ✓ ▪ Plastic ✓ 	<ul style="list-style-type: none"> ▪ Metaal: Brons; versinkte yster ✓ ▪ Plastiek ✓ 	(2)
5.5.3	Metal does not wear out ✓ easily, Plastic is cheap, and plastic and choice of metals is not corrosive. ✓	Metaal slyteer nie maklik nie, ✓ plastiek is goedkoop en beide roes nie. ✓	(2)

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