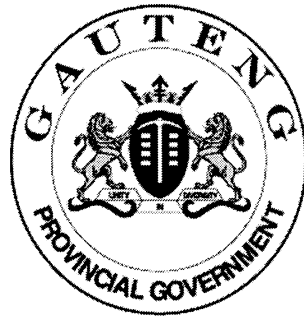


SENIOR CERTIFICATE EXAMINATION
SENIORSERTIFIKAAT-EKSAMEN



FEBRUARY / MARCH
FEBRUARIE / MAART

2005

WOODWORK

HOUTWERK

(Second Paper: Theory)
(Tweede Vraestel: Teorie)



720-2/2

WOODWORK SG: Paper 2

17 pages
17 bladsye



X05



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GAUTENGSE DEPARTEMENT VAN ONDERWYS
SENIORSERTIFIKAAT-EKSAMEN

HOUTWERK SG
(Tweede Vraestel: Teorie)

TYD: 2 uur

PUNTE: 100

INSTRUKSIES:

- Beantwoord AL die vrae.
 - Sketse mag gebruik word om jou antwoorde toe te lig.
 - Begin elke vraag op 'n nuwe bladsy.
 - Beantwoord Vraag 1 (meerkeusevrae) op die **antwoordblad** aan die **binnekant van die omslag** van jou **antwoordboek**.
-
-

**VRAAG 1A
MEERKEUSEVRAE**

Die meerkeusevrae wat volg, dek die hele sillabus.

Bestudeer die volgende stellings en vrae noukeurig en kies in elke geval die mees korrekte antwoord uit A, B, C of D. Toon jou antwoord aan deur 'n kruisie (X) oor die toepaslike letter op die **antwoordblad** aan die **binnekant van die omslag** van jou **antwoordboek** te trek.

- 1.1 Die SABS-merk verskaf aan die gebruiker die sekerheid dat _____ .
- A. die produk se prys korrek is
 - B. die produk geskik is vir die doel waarvoor dit benodig word
 - C. die produk se voggehalte korrek is
 - D. die produk nie te oud is nie
- 1.2 Die natuurlike duursaamheid van hout verwys na die hout se _____ .
- A. prys
 - B. skaarsheid
 - C. bestandheid teen droging
 - D. bestandheid teen aanvalle van verrottingswamme en insekte.
- 1.3 Die verwerking van hout verwys na _____ .
- A. hout wat deur termiete gevreet word
 - B. hout wat teen vernietigende faktore behandel word
 - C. hout wat aan wind en weer blootgestel word
 - D. hout wat omvorm word

GAUTENG DEPARTMENT OF EDUCATION
SENIOR CERTIFICATE EXAMINATION

WOODWORK SG
(Second Paper: Theory)

TIME: 2 hours

MARKS: 100

INSTRUCTIONS:

- Answer ALL the questions.
 - Sketches may be used to illustrate your answers.
 - Start each question on a new page.
 - Answer Question 1 on the **answer sheet** on the **inside cover** of your **answer book**.
-
-

QUESTION 1A
MULTIPLE-CHOICE QUESTIONS

The multiple-choice questions that follow cover the full syllabus. Study the statements and questions below carefully and, in each case, choose the most correct answer from A, B, C and D. Indicate the most correct answer by making a cross (X) over the appropriate letter on the **answer sheet** on the **inside cover** of your **answer book**.

- 1.1 The SABS mark ensures the user that _____ .
- A. the product's price is correct
 - B. the product meets the requirements of the job for which it is intended
 - C. the product's moisture content is correct
 - D. the product is not too old
- 1.2 The natural durability of wood refers to the durability of the wood's _____ .
- A. price
 - B. scarcity
 - C. resistance to seasoning
 - D. resistance to attacks by decaying fungi and insects.
- 1.3 The weathering of timber refers to _____ .
- A. timber being eaten by termites
 - B. timber being treated against destroying factors
 - C. timber being exposed to wind and weather
 - D. the conversion of timber

- 1.4 'n Skaaldeel is _____ .
- A. bo 125 mm x 125 mm
 - B. 'n balk in die middel deurgesaag
 - C. 10 m²
 - D. die boomstam wat afgekap is, met die takke verwyder
- 1.5 Hierdie houtsoort is bekend daarvoor dat dit kernverrotting kry.
- A. Tambotie
 - B. Geelhout
 - C. Kiaat
 - D. Imbuia
- 1.6 Verkleuring van hout word veroorsaak deur _____ .
- A. houtkewers
 - B. termiete
 - C. swamme
 - D. droging
- 1.7 'n Stomp gereedskapstuk is meer geneig om ongelukke te veroorsaak omdat _____ .
- A. die materiaal wat gesny word, beskadig raak
 - B. meer krag nodig is, wat die mate van beheer verminder
 - C. stukkies van die gereedskapstuk se snykant kan uitsplinter
 - D. die materiaal wat gesny word, mag bars
- 1.8 Die grootte van 'n dwarspenhamer word bepaal deur die _____ .
- A. gewig van die kop
 - B. grootte van die kop
 - C. lengte van die steel
 - D. slaanvlak
- 1.9 Dit is noodsaaklik om 'n beitellem tydens die slypproses van die slypsteenvlak, kort-kort in water te dompel om te voorkom dat die lem _____ .
- A. aanpak
 - B. grof word
 - C. sag word
 - D. hard word
- 1.10 'n Braam sal soms gevind word op 'n _____ .
- A. klouhamer
 - B. figuursaag
 - C. kapbeitel
 - D. omslag

- 1.4 A flitch is _____ .
- A. above 125 mm x 125 mm
 - B. a beam cut in the middle
 - C. 10 m²
 - D. the trunk felled and lopped
- 1.5 This timber is known to get heart rot.
- A. Tamboti
 - B. Yellowwood
 - C. Pau Marfin
 - D. Imbuia
- 1.6 Discolouring of wood is caused by _____ .
- A. wood beetles
 - B. termites
 - C. fungi
 - D. seasoning
- 1.7 A blunt tool is more conducive to accidents because _____ .
- A. the material being cut gets damaged
 - B. more force is required leading to a loss of control
 - C. the edge of the cutting tool might get chipped
 - D. the material being cut, might split
- 1.8 The size of a cross-pene hammer is determined by _____ .
- A. the mass of its head
 - B. the size of its head
 - C. the length of its handle
 - D. its face
- 1.9 It is necessary to dip a chisel blade regularly into water during the grinding process of the grinding bevel, to prevent the chisel becoming _____ .
- A. glazed
 - B. rough
 - C. soft
 - D. hard
- 1.10 A burr will sometimes be found on a _____ .
- A. claw hammer
 - B. coping saw
 - C. mortice chisel
 - D. ratchet brace

- 1.11 Olie word tydens die slypproses van gereedskap op 'n slypsteen aangewend om _____ .
- A. die beitel makliker oor die steen te laat gly
 - B. te verhoed dat die steen oorverhit
 - C. te verhoed dat die porieë van die steen verstop
 - D. te verhoed dat die steen in die middel 'n holte vorm.
- 1.12 Wat word gebruik om die hoek te behou wanneer skuins gate in hout geboor word?
- A. 'n Winkelhaak
 - B. 'n Swaaihaak
 - C. 'n Enkelpenkruishout
 - D. 'n Bankhaak
- 1.13 Die rede waarom 'n saag soms gedurende die saagproses deur die hout vasgeknyp word, is dat die _____ .
- A. tande nie korrek geset is nie
 - B. saaglem te breed is
 - C. saag se tande te fyn is
 - D. hout te sag is
- 1.14 Watter een van die volgende gereedskap is nie deel van die toerusting by die houtdraaibank nie?
- A. Draaiskyf.
 - B. Koeëllaersenter.
 - C. Boorklembus.
 - D. Tapapparaat.
- 1.15 Om 'n vrugtebak op 'n houtdraaibank te draai, word die hout op 'n _____ gemonteer.
- A. rollaersenter
 - B. drieklouklembus
 - C. vurksenter
 - D. kopplaat
- 1.16 Hierdie onderdeel van die sirkelsaag verhoed dat die lem in die hout vasbyt terwyl dit gesaag word.
- A. Spleterapparaat.
 - B. Keerstaaf.
 - C. Skerm.
 - D. Verstekskuifblok.

- 1.11 Oil is used on an oilstone during the honing of tools to _____.
- A. ease the honing process.
 - B. prevent the stone from overheating.
 - C. prevent the pores on the stone from becoming clogged.
 - D. prevent the stone from becoming hollow.
- 1.12 What is used to maintain the correct angle when inclined holes are bored?
- A. A try square
 - B. A sliding bevel
 - C. A marking gauge
 - D. A bench hook
- 1.13 The reason a saw sometimes binds (gets pinched) in the wood is because _____.
- A. the setting is incorrect
 - B. the saw blade is too wide
 - C. the teeth are too fine
 - D. the wood is too soft
- 1.14 Which of the following tools is not part of the equipment of a wood lathe?
- A. Face plate
 - B. Ball-bearing centre
 - C. Drill chuck
 - D. Morticing tool
- 1.15 To turn a bowl on a wood lathe, use _____.
- A. a roller bearing centre
 - B. a three-jaw chuck
 - C. a spur centre
 - D. a face plate
- 1.16 This part of the circular saw prevents the blade binding while wood is being cut.
- A. Splitter (riving knife)
 - B. Stop rods
 - C. Guard
 - D. Mitre gauge

- 1.17 'n Defek op hout wat deur masjiene veroorsaak word, is _____ .
- A. brandmerke
 - B. golftrekking
 - C. spiraaldraad
 - D. kwaste
- 1.18 Raamklampe word alternatiewelik een bo en een onder geplaas by die lymwerk van 'n tafelblad om die volgende rede:
- A. Dit is makliker.
 - B. Daar is meer spasie.
 - C. Dit hou die oppervlak gelyk.
 - D. Dit versprei die massa eweredig.
- 1.19 Die hoeveelheid preserveermiddel wat in die hout agterbly nadat die behandelingsproses voltooi is, staan bekend as _____ .
- A. absorpsie
 - B. penetrasie
 - C. permeabiliteit
 - D. retensie
- 1.20 Verhouding (as 'n ontwerpbeginsel) verwys na die _____ tussen afmetings, oppervlaktes, vorms en massa.
- A. harmonie
 - B. eenvoud
 - C. styl
 - D. doelmatige gebruik

(20)

- 1.17 A defect in timber caused by machines is _____ .
- A. burning marks
 - B. waving
 - C. spiral grain
 - D. knots
- 1.18 Sash clamps are arranged alternatively on the top and bottom to glue a table top for the following reason:
- A. It is easier.
 - B. There will be more space.
 - C. It will keep the surface level.
 - D. It will even the weight.
- 1.19 This refers to the quantity of preservative that remains in the wood after the treatment process has been completed:
- A. Absorption
 - B. Penetration
 - C. Permeability
 - D. Retention
- 1.20 Proportion (as a principle of design) refers to the _____ between dimensions, surface, mass and form.
- A. harmony
 - B. simplicity
 - C. style
 - D. adequate use

(20)

VRAAG 1B

- 1.2 **Tabel 1.2** gee in elke geval letters, getalle, woorde en/of frases. In elke geval deel drie 'n gemeenskaplike kenmerk en 'n vierde het niks in gemeen nie. Kies in elk geval die woord of frase wat **nie** pas nie en skryf slegs die **antwoord** langs die **vraagnommer** in jou **antwoord-boek** neer.

	A	B	C	D
1.2.1	Beuk	Imbuia	Japanese eik	Kiaat
1.2.2	Raamsaag	Bandsaag	Figuursaag	Sirkelsaag
1.2.3	Swamme	Droë toestande	Vogtigheid	Suurstof
1.2.4	Winkelhaak	Dubbelpen- kruishout	Merkmes	Enkelpen- kruishout
1.2.5	Skuinsbeitel	Steekbeitel	Gutsbeitel	Skeibeitel
1.2.6	Voegmontering	Spykerpons	Blokhamer	Kapbeitel
1.2.7	Rugsaag	Portretraam	Verstekbak	Laaikonstruksie
1.2.8	Lang-en- kortskouer-tap- en-gatvoeg	Vaste paneel	Deurraam	Skoftap-en- gatvoeg met groef.
1.2.9	Soetskaaf	Skilbeitel	Rugsaag	Skraper
1.2.10	Waspolitoer	Kreosoot	Sintetiese verniss	Olie

(10)

Tabel 1.2

[30]

QUESTION 1B

1.2 **Table 1.2** sets out letters, numbers, words and/or phrases. Three in each row have a common factor; one is unrelated. Choose the word or phrase that is unrelated to the other three and write your answer on the answer sheet.

	A	B	C	D
1.2.1	Beech	Imbuia	Japanese oak	Kiaat
1.2.2	Frame saw	Band saw	Coping saw	Circular saw
1.2.3	Fungi	Dry conditions	Moisture	Oxygen
1.2.4	Try square	Mortice gauge	Marking knife	Marking gauge
1.2.5	Skew chisel	Firmer chisel	Firmer gouge	Parting chisel
1.2.6	Assembling joints	Nail punch	Carpenter's mallet	Mortice chisel
1.2.7	Tenon saw	Picture frame	Mitre box	Drawer construction
1.2.8	Long and short shouldered mortice and tenon joint	Fixed panel	Door frame	Haunched mortice and tenon joint with groove
1.2.9	Smoothing plane	Paring chisel	Tenon saw	Scraper
1.2.10	Wax polish	Creosote	Synthetic varnish	Oil polish

(10)

Table 1.2

[30]

VRAAG 2

HOUTSOORTE, OPSAAGMETODES, DEFEKTE EN DIE GRADERING VAN HOUT

2.1 **Tabel 2.1** toon verskillende inligting oor houtsoorte. Skryf die vraagnommer (2.1) en die letters **A** tot **R** onder mekaar in jou antwoordboek neer. Lees die rye vertikaal en gebruik die gegewe inligting om die antwoorde te soek. Kies die mees relevante feite en skryf slegs die toepaslike nommer (1-12) uit die boonste deel van die tabel. Byvoorbeeld, A – 1, B – 2, ens.

	Natuurlike groeiplek:	Kleur van kernhout:	Reuk:	Tekstuur:	Bevat:	Gebruike:
	1. Zambie 2. Knysna (SA) 3. Uganda 4. Brittanje 5. Mpumalanga 6. Brasilië 7. Japan 8. VSA 9. Tanzanië 10. Namibië 11. Kanada	1. Grys 2. Ligbruin tot donkerbruin 3. Donkerbruin tot rooibruin 4. Sjokoladebruin 5. Goudbruin 6. Geelbruin tot strooi 7. Rooierig 8. Ligrooi tot donkerrooi 9. Geel	1. Seder 2. Spesery 3. Hars 4. Soet 5. Onaangenaam	1. Fyn 2. Middelmatig 3. Grof 4. Egalig	1. Olie 2. Hars 3. Gallusuur 4. Soutkristalle	1. Dakkappe 2. Gereedskap-handvatsels 3. Vensterrame 4. Goeie gehalte meubels
Beuk						Q
Geelhout				L		
Imbuia			I			
Iroko	A					
Japanese eik		E			N	
Kiaat		F		M		
Oregon-den	B					
Pau Marfin	C					
S.A. den			J		O	R
Sapele mahonie		G				
Stinkhout	D					
Tambotie		H	K		P	

Tabel 2.1

(18)

2.2 Net sekere houtsoorte word vir die maak van verpakkingskissies vir groente en vrugte aangewend.

2.2.1 Watter houtsoort uit die volgende groep sal geskik wees vir hierdie taak?

- a) Eikehout
- b) Geelhout
- c) S.A. den
- d) Kiaat

(1)

b.o.

QUESTION 2

TIMBERS, CONVERSION METHODS, DEFECTS AND GRADING

2.1 **Table 2.1** shows various information on timber. Write down the question number and the letters **A** to **R** below one another. Read the rows vertically and use the information provided to find the answers. Write only the numbers of the relevant facts next to the letters **A** to **R**. For example, A – 1, B – 2, etc.

	Distribution:	Colour of heartwood:	Odour:	Texture:	Contains:	Uses:
	1. Zambia 2. Knysna (SA) 3. Uganda 4. Britain 5. Mpumalanga 6. Brazil 7. Japan 8. USA 9. Tanzania 10. Namibia 11. Canada	1. Grey 2. Light brown to dark brown 3. Dark brown to reddish brown 4. Chocolate brown 5. Golden brown 6. Yellow brown to straw 7. Reddish 8. Light red to dark red 9. Yellow	1. Cedar 2. Spicy 3. Resin 4. Sweet 5. Unpleasant	1. Fine 2. Medium 3. Rough 4. Even	1. Oil 2. Resin 3. Gallic acid 4. Salt crystals	1. Roof truss 2. Tool handles 3. Window frames 4. Good quality furniture
Beech						Q
Yellowwood				L		
Imbuia			I			
Iroko	A					
Japanese Oak		E			N	
Kiaat		F				
Oregon pine	B			M		
Pau Marfin	C					
S.A. pine			J		O	R
Sapele mahogany		G				
Stinkwood	D					
Tamboti		H	K		P	

Table 2.1

(18)

2.2 Only certain types of timber are used for packing cases for vegetables and fruit.

2.2.1 Which one of the following timbers will be suitable for this task?

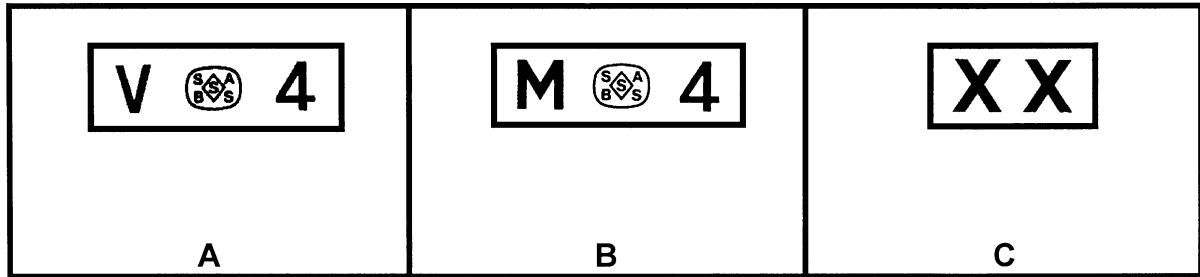
- a) Oak
- b) Yellowwood
- c) S.A. pine
- d) Kiaat

(1)

- 2.2.2 Verstrek TWEE redes waarom hierdie houtsoort vir die doel gewend word. (2)
- 2.2.3 Watter opsaagmetode word algemeen vir hierdie houtsoort gebruik? (1)
- 2.2.4 Noem DRIE voordele wat hierdie metode in Vraag 2.2.3 bo ander metodes inhou. (3)
- 2.3 'n Kliënt het 'n eetkamerstel van stinkhout en wil 'n ekstra stoel laat maak. As gevolg van die skaarsste aan stinkhout moet die stoel van 'n ander houtsoort gemaak word.
- 2.3.1 Watter houtsoort uit die volgende groep sal 'n goeie plaasvervanger vir stinkhout wees? (1)
- a) Beukehout
 - b) Imbuia
 - c) Kiaat
 - d) Sapele mahonie
- 2.3.2 Van waar is die houtsoort afkomstig? (1)
- 2.3.3 Vergelyk dié houtsoort se kleur met dié van stinkhout. (2)
- 2.4 Beantwoord die volgende vrae oor die defekte wat in hout voorkom.
- 2.4.1 Wat is die oorsaak van geuttrek? (1)
- 2.4.2 Volgens watter opsaagmetode sal hout met kernverrotting omvorm word? (1)
- 2.4.3 Hoekom kom kringbars hoofsaaklik voor by bome wat aan die buitekant van 'n plantasie groei? (1)
- 2.4.4 Noem 'n houtsoort wat maklik kwaste vorm. (1)
- 2.4.5 Watter opsaagmetode veroorsaak wankante? (1)
- 2.4.6 Watter probleem het planke dikwels wat uit reaksiehout gesaag word? (1)
- 2.4.7 Wat is die oorsaak van diep barste aan die kopkante van planke? (1)

- 2.2.2 State TWO reasons why this timber is used for this purpose. (2)
- 2.2.3 Which method of conversion is usually used for this timber? (1)
- 2.2.4 State THREE advantages of this method (2.2.3) over other methods. (3)
- 2.3 A client has a dining-room set made of stinkwood and wants an extra chair. Due to the scarcity of stinkwood the chair should be made of another timber.
- 2.3.1 Which one of the following timbers will be an acceptable substitute for stinkwood? (1)
- a) Beech
 - b) Imbuia
 - c) Kiaat
 - d) Sapele mahogany
- 2.3.2 From where does this timber originate? (1)
- 2.3.3 Compare the colour of this timber with that of stinkwood. (2)
- 2.4 Answer the following questions concerning defects that occur in timber:
- 2.4.1 What is the cause of cupping? (1)
- 2.4.2 Which conversion method will be used to convert logs with heart rot? (1)
- 2.4.3 Why would ring shake mostly occur in trees found along the outside of a plantation? (1)
- 2.4.4 State the name of a timber that has many knots. (1)
- 2.4.5 Which conversion method causes waney edges? (1)
- 2.4.6 Which problem often occurs when boards are sawn from reaction wood? (1)
- 2.4.7 What is the cause of deep cracks at the end of boards? (1)

2.5 Bestudeer die graderingsmerke in **Figuur 2.5** en beantwoord die volgende vrae.



Figuur 2.5

- 2.5.1 Wat is die betekenis van die letter **V** in Figuur 2.5A? (1)
- 2.5.2 Wat is die betekenis van die letter **M** in Figuur 2.5B? (1)
- 2.5.3 Noem die gebruik van hout wat met 'n **V** en **M** gemerk word. (1)
- 2.5.4 Wat is die betekenis van die merk in Figuur 2.5C? (1)

[40]

VRAAG 3 HAND- EN MASJIENGEREEDSKAP

- 3.1 Die dwarssaag word uitsluitlik vir dwarssaagwerk gebruik en die kloofsaag vir kloofsaagwerk. Beskryf kortliks die verskil tussen die tande van die dwarssaag en die kloofsaag. (2)
- 3.2 Deur van 'n rugsaag en 'n bankhaak gebruik te maak, word 'n plankie tot op die korrekte lengte gesaag.
- 3.2.1 Wat is die posisie van die hand wat **nie** die saag vashou nie? (1)
- 3.2.2 Teen watter hoek is die saag aan die begin van die snit? (1)
- 3.2.3 Wat is die posisie van die saag en agterkant tydens die saagproses? (1)
- 3.3 'n Voorloperskaaf is skoongemaak en moet weer aanmekaar gesit word. In watter volgorde sal jy die volgende onderdele aanmekaar sit? (4)
- Keerbeitel
 - Beitelbed
 - Knipwig
 - Skaafbeitel
- 3.4 Die voorloperskaaf moet verstel word vir fyn skaafwerk. Wat is die afstand wat die keerbeitel agter die snyvlak van die skaafbeitel moet wees. (1)
- 3.5 Waarom is die kake van die knyptang krom? (2)

2.5 Study the grading marks in **Figure 2.5** and answer the following questions.

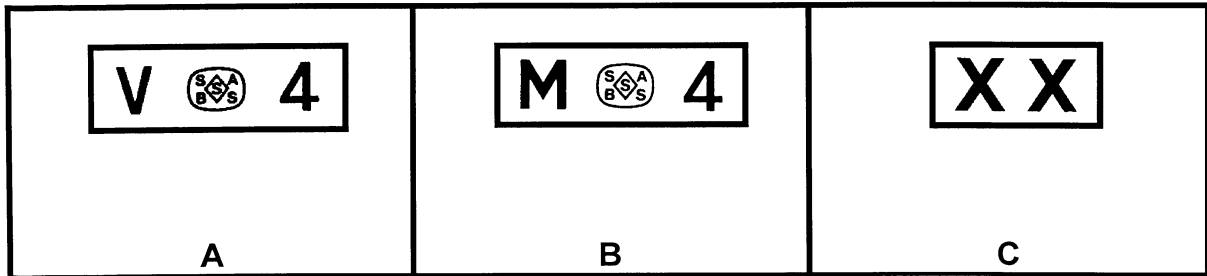


Figure 2.5

- 2.5.1 What does the letter **V** in Figure 2.5A mean? (1)
- 2.5.2 What does the letter **M** in Figure 2.5B mean? (1)
- 2.5.3 State the use of timber marked **V** and **M**. (1)
- 2.5.4 What does the mark in Figure 2.5C mean? (1)
- [40]

QUESTION 3 HAND AND MACHINE TOOLS

- 3.1 The cross-cut saw is mainly used to cut across the grain of wood, while the rip saw is used to cut along the grain of wood. Briefly describe the difference between the teeth of the cross-cut saw and the rip saw. (2)
- 3.2 By using a tenon saw and a bench hook, a board can be cut to length.
- 3.2.1 What is the position of the hand that does **not** grip the saw? (1)
- 3.2.2 At what angle is the position of the saw at the beginning of the cut? (1)
- 3.2.3 What is the position of the back of the saw during the cutting process? (1)
- 3.3 A jackplane has been cleaned and must be put together again. In what sequence will you put the following parts together again? (4)
- Cap iron
 - Frog or bed
 - Lever cap
 - Cutting iron
- 3.4 The jack plane must be adjusted to do fine planing. To what distance will the cap iron be set from the edge of the cutting iron? (1)
- 3.5 Why are the jaws of the carpenter's pincers bowed? (2)

- 3.6 Wat kan gedoen word om te voorkom dat die knyptang hout kneus wanneer spykers uitgetrek word? (1)
- 3.7 Die keuse van die korrekte skroewedraaier is baie belangrik by die indraai van skroewe. Die punt van 'n platpuntskroewedraaier moet dieselfde breedte as die skroefgleufie hê. Wat sal gebeur indien die punt
- 3.7.1 te wyd is?
- 3.7.2 te smal is?
- 3.7.3 te breed is?
- 3.7.4 te dun is? (4)
- 3.8 Meet-, merk- en toetsgereedskap is presisie-instrumente en moet behoorlik versorg word om ten alle tye akkurate werk te verseker.
- 3.8.1 Hoe sal jy roeserigheid van 'n staalvoumeetstok verwyder? (1)
- 3.8.2 Hoe sal jy verseker dat sweterige hande nie weer die meetstok laat roes nie? (2)
- 3.9 **Tabel 3.9** toon die werkstappe en/of –prosesse wat uitgevoer moet word om 'n rowwe plank na 'n mate van 900 mm x 75 mm x 75 mm te verwerk. Skryf die nommers **1** tot **13** onder mekaar neer en daarnaas die korrekte merk- en/of toetsgereedskap, masjien en/of hulpmiddel wat gebruik word om die genoemde prosesse uit te voer.

Werkstap/-proses	Merk-/toets gereedskap	Masjien	Hulpmiddel	Werksvlakmerk/ Werkskantmerk
Skaaf werksvlak en toets vir gelykheid	1	2	3	4
Skaaf werkskant gelyk en toets vir haaksheid.	5	6		7
Skaaf plank na verlangde dikte .	8	9		
Skaaf plank na verlangde breedte .	10	11		
Saag plant na verlangde lengte .	12	13		

(13)

Tabel 3.9

- 3.6 What can be done to stop the pincers from damaging wood when removing nails? (1)
- 3.7 When turning in screws, the choice of correct screwdriver is very important. The tip of a flat-tipped screwdriver should have the same width as the screw slot. What will happen if the tip
- 3.7.1 is too wide?
- 3.7.2 is too narrow?
- 3.7.3 is too thick?
- 3.7.4 is too thin? (4)
- 3.8 Measuring, marking and testing tools are precision tools and have to be looked after to ensure accurate work at all times.
- 3.8.1 How will you remove rustiness from a steel folding ruler? (1)
- 3.8.2 How will you make sure that sweaty hands do not cause rust to the ruler again? (2)
- 3.9 **Table 3.9** shows the working steps and/or processes to work a rough board to dimensions of 900 mm x 75 mm x 75 mm. Write the numbers 1 to 13 underneath one another and next to each the correct marking and/or testing tools, machine and/or aid that is used to carry out the mentioned processes.

Work step/process	Marking / testing tools	Machine tool	Accessory / Aid	Face side mark/ face edge mark
Plane the face side and test for flatness.	1	2	3	4
Plane the face edge and test for squareness.	5	6		7
Plane the board to the required thickness .	8	9		
Plane the board to the required width .	10	11		
Saw the board to the required length .	12	13		

(13)

Table 3.9

3.10 Die sirkelsaag

'n Plank met afmetings 450 mm x 80 mm x 20 mm moet verwerk word tot 'n breedte van 60 mm en 'n lengte van 420 mm. Skryf die letters **A** tot **J** onder mekaar in jou antwoordboek. Bestudeer **Tabel 3.10** en koppel die gegewe prosesse met 'n onderdeel(e), toebehoor(e), veiligheidsapparaat en/of veiligheidsmaatreël afhangend van waar die letter op die tabel staan.

Proses	Onderdeel(e)	Hulpmiddel/ Toebehoor	Veiligheids- apparaat	Veiligheidsmaatreëls: Masjien
Stel die hoogte van die lem	A & B			C
Verstel vir breedte snit	D			
Saag plank na verlangde breedte		E	F + G	
Saag plank na verlangde lengte		H		I

(9)

Tabel 3.10

3.11 Identifiseer die oorsake vir die volgende foute wat by masjiengereedskap mag voorkom **en** bied 'n oplossing om hierdie foute te voorkom.

3.11.1 **Die vlaksaaf:**

Die plank wat geskaaf word, sak aan die einde van die snit en skaaf dieper aan die einde van die snit.

(2)

3.11.2 **Die kolomboormasjien:**

Werkstuk splinter wanneer boorpunt deurbreek.

(2)

3.11.3 **Die houtdraaibank:**

Werkstuk hou op om te draai wanneer draaiwerk met beitel begin word.

(2)

3.11.4 **Die skuurmasjien:**

Band beweeg rond wanneer skuurwerk gedoen word.

(2)

[50]

3.10 The circular saw

A board with dimensions 450 mm x 80 mm x 20 mm must be worked to a width of 60 mm and a length of 420 mm. Write the letters **A** to **J** underneath one another in your answer book. Study **Table 3.10** and provide only the answer by matching the given processes with a part(s), accessory, safety equipment and/or safety measures.

Process	Part(s)	Accessory	Safety Equipment	Safety measurement: Machine
Set the height of the blade	A & B			C
Setting for cutting to width	D			
Cut board to required width		E	F + G	
Cut board to required length		H		I

(9)

Table 3.10

3.11 Identify possible causes for the following errors that might occur when using machine tools and give solutions to prevent these errors:

3.11.1 The jointer:

The stock drops at finish of cut and gouges a deeper cut at the end.

(2)

3.11.2 The drill press:

Work splinters on the underside of the board.

(2)

3.11.3 The wood turning lathe:

Work stops turning as tool is applied.

(2)

3.11.4 The belt and disk sander:

While sanding the belt moves to either side of the drum.

(2)

[50]

VRAAG 4

KONSTRUKSIE EN HOUTWERKVOEË

4.1 Watter verbredingsglas sal die geskikste vir die volgende wees:

4.1.1 Planke vir die blad van 'n klein koffietafel

4.1.2 Planke om 'n swaar tafelblad te vorm

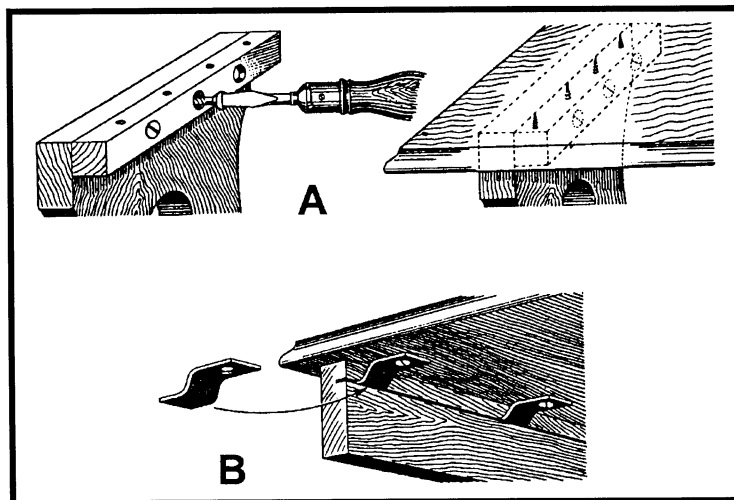
4.1.3 Muurpanele

4.1.4 Vrugtekissies

4.1.5 Oliebevattende hout vir 'n tafelblad

(5)

4.2 **Figuur 4.2** toon twee metodes om 'n tafelblad aan 'n reling vas te sit.



Figuur 4.2

4.2.1 Watter metode sal die mees geskikte wees om 'n blad uit soliede hout aan 'n raam met vier pote te heg?

(1)

4.2.2 Wat is die rede vir jou antwoord in Vraag 4.2.1?

(2)

QUESTION 4

CONSTRUCTION AND WOODWORK JOINTS

4.1 Which widening joint will be the most suitable for the following:

4.1.1 Boards for the top of a small coffee table

4.1.2 Boards for a heavy tabletop

4.1.3 Wall panels

4.1.4 Fruit cases

4.1.5 Wood with high oil content for a table top

(5)

4.2 **Figure 4.2** shows two methods to attach a tabletop to a rail.

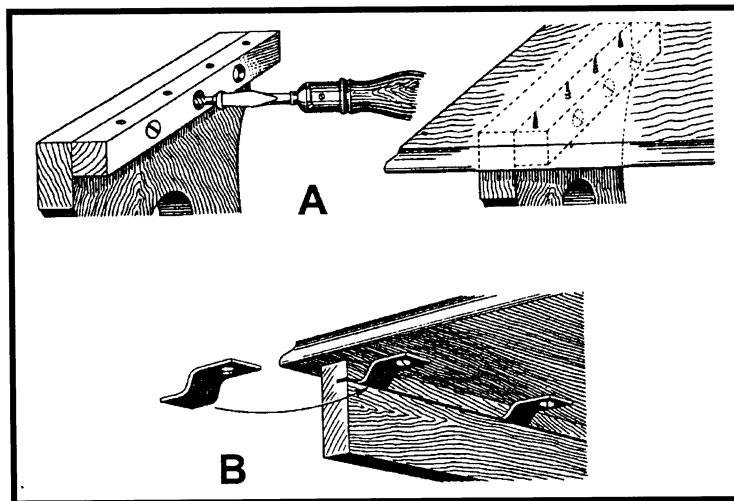


Figure 4.2

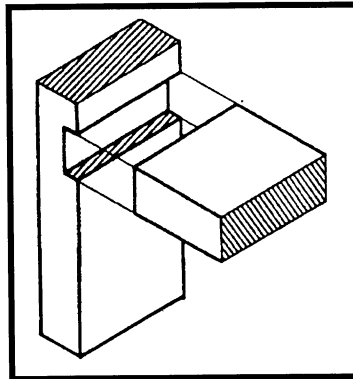
4.2.1 Which method will be the most suitable to attach a tabletop made of solid wood to a frame with four legs?

(1)

4.2.2 What is the reason for the answer in Question 4.2.1?

(2)

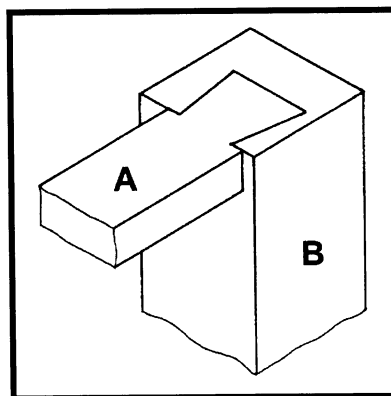
4.3 **Figuur 4.3** toon 'n gedeeltelike inkeepvoeg (inlaatvoeg) .



Figuur 4.3

- 4.3.1 Toon deur middel van 'n skets hoe jy dié voeg sal verander sodat dit nie van vooraf sigbaar is nie. (2)
- 4.3.2 Wat sal jy hierdie voeg noem? (1)
- 4.3.3 Noem TWEE toepassings vir hierdie voeg. (2)
- 4.3.4 Maak 'n isometriese skets om nog 'n voorbeeld van 'n inlaatvoeg te toon. (2)

4.4 **Figuur 4.4** toon 'n gedeeltelike boreling (A) en poot (B) van 'n tafel wat deur middel van 'n enkel swaelstertvoeg gevoeg moet word. Die afmetings van A is 18 mm dik x 40 mm breed, B se afmetings is 60 mm x 60 mm.



Figuur 4.4

- 4.4.1 Gebruik 'n liniaal en potlood en teken volgens 'n skaal van 1:1 die bo-aansig van A. Benoem die fasette en toon die afmetings van die swaelstert. Die verhouding van die swaelstertskuinstes is 1:6 en die lengte van die swaelstert is 36 mm. (3)
- 4.4.2 Beskryf kortliks die prosesse wat jy sal gebruik om die swaelstertvoeg te maak sodat A en B saamgevoeg kan word. Die volgorde moet korrek wees. (4)

4.3 **Figure 4.3** shows part of a housed joint.

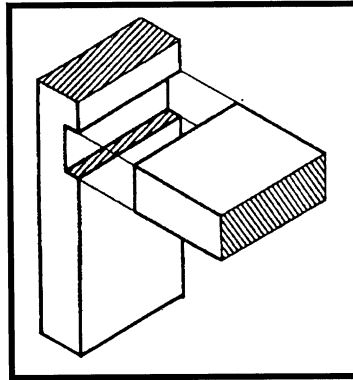


Figure 4.3

- 4.3.1 Show by means of a sketch how you will alter the joint so that it is not visible from the front. (2)
- 4.3.2 What will you call this joint? (1)
- 4.3.3 State TWO uses for this joint. (2)
- 4.3.4 Draw an isometric sketch showing another example of a housed joint. (2)

4.4 **Figure 4.4** shows part of a top rail (A) and leg (B) of a table which must be jointed by a single dovetail joint. The measurements for A are 18 mm thick x 40 mm wide and B are 60 mm x 60 mm.

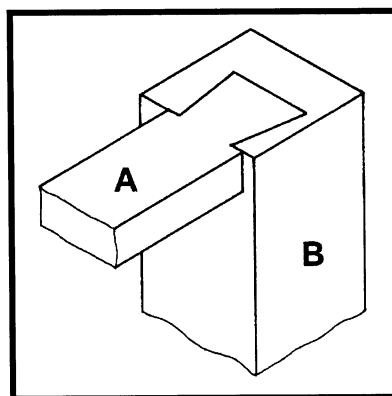


Figure 4.4

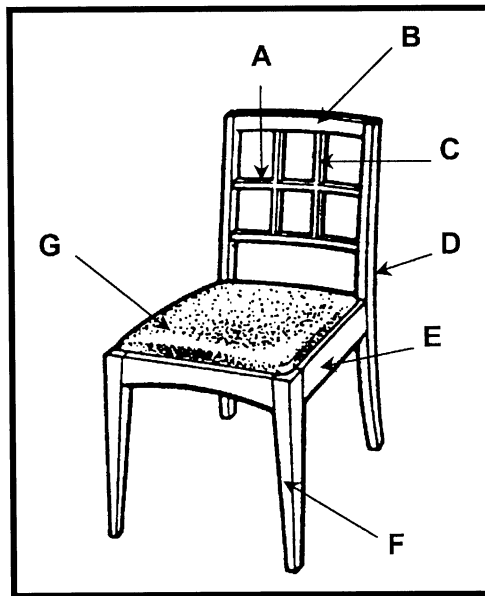
- 4.4.1 Use a pencil and ruler and draw to a scale of 1:1 the top view of A. Label and show the dimensions of the dovetail. The ratio of the dovetail slopes is 1:6 and the length of the dovetail is 36 mm. (3)
- 4.4.2 Briefly describe the processes you will use to make the dovetail joint so that A and B could join. The correct sequence should be used. (4)

4.4.3 Die skuinstes van swaelsterte vir harde en sagte hout is nie dieselfde nie. Watter tipe hout (sagte hout of harde hout) word met die volgende skuinstes gebruik:

- a) 1:4 (1)
b) 1:8 (1)

4.4.4 Waarom verskil die swaelstertskuinstes in harde en sagte hout? (2)

4.5 **Figuur 4.5** toon 'n eetkamerstoel. Bestudeer die skets en beantwoord die volgende vrae.



Figuur 4.5

4.5.1 Soek die geskikte voeg in **Kolom B** wat die dele genoem in **Kolom A**, sal voeg. Skryf langs elke letter (a tot e) van **Kolom A** slegs die nommer van die geskikte voeg uit **Kolom B** neer. Byvoorbeeld, a – 1, b – 2, ens. (5)

Kolom A		Kolom B	
a)	A aan D	1.	Skof-tap-en-gatvoeg
b)	A aan C	2.	Enkelswaelstertvoeg
c)	B aan D	3.	Kruishalfinlaatvoeg
d)	D aan E	4.	Hoektoomvoeg
e)	E aan F	5.	Stomp vierskouer-tap-en-gatvoeg
		6.	Stomp-tap-en-gatvoeg

4.5.2 Beskryf kortliks hoe jy die los sitplek in posisie sal hou. Sketse mag gebruik word. (2)

4.4.3 The slopes of dovetails for hard woods and soft woods are not the same. Which type of timber (softwoods or hard woods) will use the following slopes:

- a) 1:4 (1)
- b) 1:8 (1)

4.4.4 Why does the dovetail slope between hard woods and soft woods vary? (2)

4.5 **Figure 4.5** shows a dining-room chair. Study the drawing and answer the questions that follow.

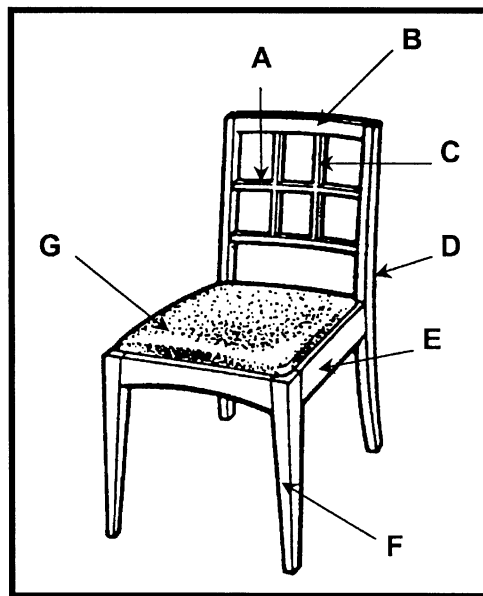


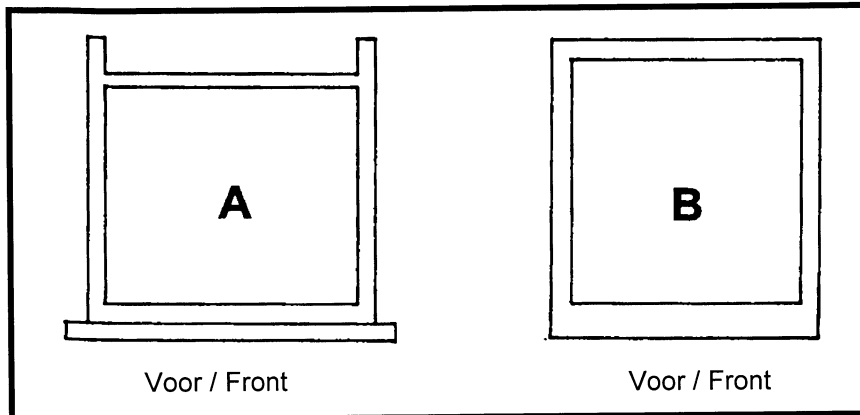
Figure 4.5

4.5.1 Find the most suitable joint in **Column B** to join the parts mentioned in **Column A**. Write next to each letter (a to e) of **Column A** only the number of the applicable joint found in **Column B**. For example, a – 1, b – 2, etc. (5)

Column A	Column B
a) A to D	1. Haunched mortice and tenon joint
b) A to C	2. Single dovetail joint
c) B to D	3. Cross-halving joint
d) D to E	4. Corner bridle joint
e) E to F	5. Four shouldered stub mortice and tenon joint
	6. Stub mortice and tenon joint

4.5.2 Briefly describe how you will keep the loose seat in position. Sketches may be used. (2)

4.6 **Figuur 4.6** toon die bo-aansigte van twee laaie A en B.



Figuur 4.6

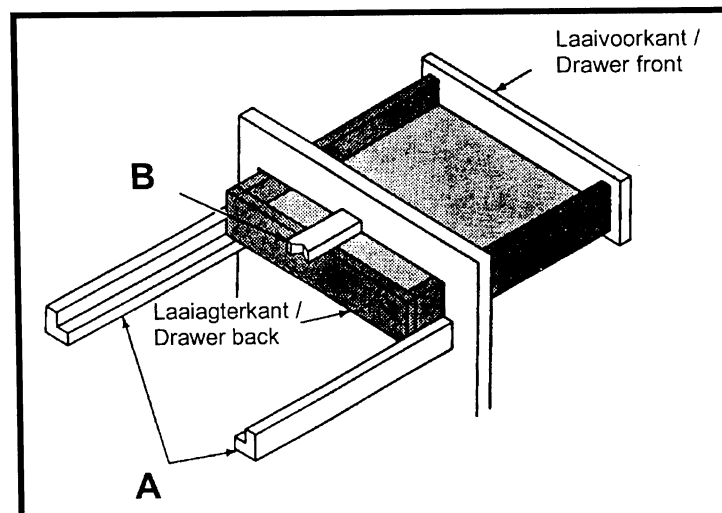
4.6.1 **Laaie A** is met die hulp van handgereedskap aanmekaar gesit. Watter voeg/tegniek sal jy vir die volgende gebruik?

- a) Die sykante aan die voorkant en agterkant voeg (1)
- b) Die vals voorkant aan die laaivoorkant voeg (1)

4.6.2 **Laaie B** is met die behulp van masjiengereedskap aanmekaar gesit. Watter voeë sal jy vir die volgende gebruik?

- a) Die sykante aan die voorkant voeg (1)
- b) Die sykante aan die agterkant voeg (1)

4.7 **Figuur 4.7** toon 'n tipiese laaimeganisme.



Figuur 4.7

4.7.1 Benoem die TWEE onderdele A en B. (2)

4.7.2 Wat is die funksie van A? (1)

[40]

4.6 Figure 4.6 shows the top views of two drawers A and B.

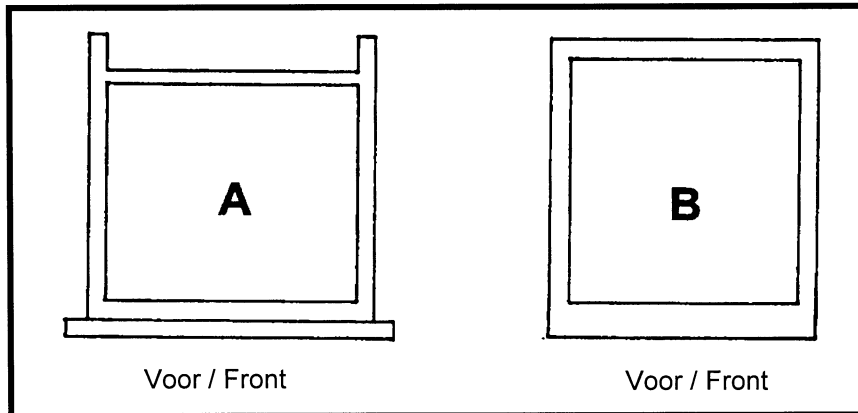


Figure 4.6

4.6.1 Hand tools were used to assemble drawer A. Which joint / technique will you use to join the following?

- a) The sides to the front and back (1)
- b) The false front to the drawer front (1)

4.6.2 Machine tools were used to assemble drawer B. Which joint will you use to join the following?

- a) The sides to the front (1)
- b) The sides to the back (1)

4.7 Figure 4.7 shows a typical drawer mechanism.

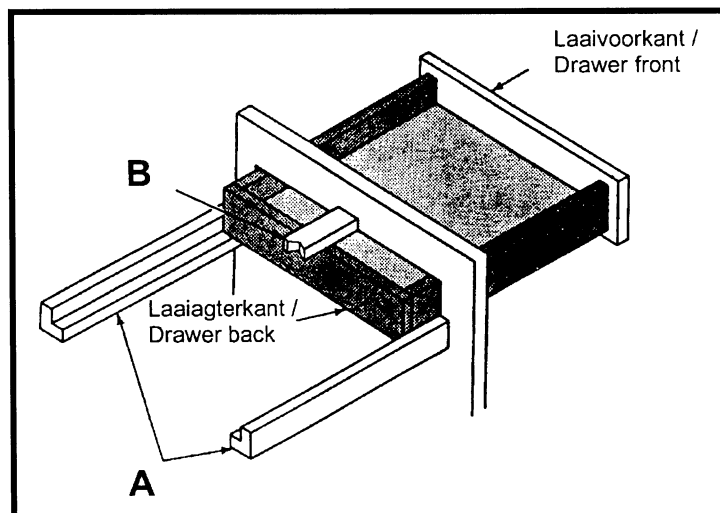


Figure 4.7

4.7.1 Name the TWO parts A and B. (2)

4.7.2 What is the function of A? (1)

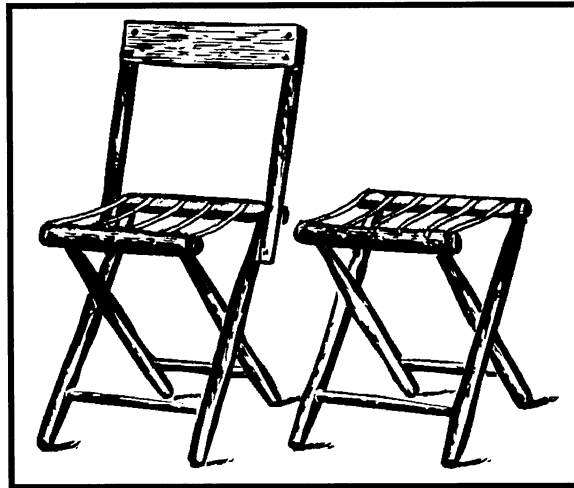
[40]

VRAAG 5

ONTWERP, VERDUURSAMING EN AFWERKING

5.1 Ontwerp

5.1.1 **Figuur 5.1** toon 'n eg Suid-Afrikaanse meubelstuk, die kampstoeltjie.



Figuur 5.1

- a) Noem VIER faktore wat volgens jou 'n groot rol sou gespeel het in die ontwerp en ontwikkeling van hierdie meubelstuk. (4)
- b) Bespreek kortliks die volgende ontwerpbeginsels van toepassing op die kampstoeltjie:
- (i) Funksionaliteit
 - (ii) Voorkoms
 - (iii) Materiaal
 - (iv) Konstruksie (8)
- c) Indien riempies nie beskikbaar sou wees nie, watter oplossing sou jy bied? (2)
- d) Wat is die ideale hoogte vir die stoeltjie? (2)
- 5.1.2 Die moderne tyd waarin ons lewe speel 'n bepalende rol in die ontwerp en vervaardiging van meubels. In die lig van moderne tegnieke, die gebruik van masjiene en die groot aanvraag na meubels, noem SES kenmerke van hedendaagse meubels. (6)

QUESTION 5

DESIGN, PRESERVATION AND FINISHING

5.1 Design

5.1.1 Figure 5.1 shows a true South African piece of furniture, the camp-stool.

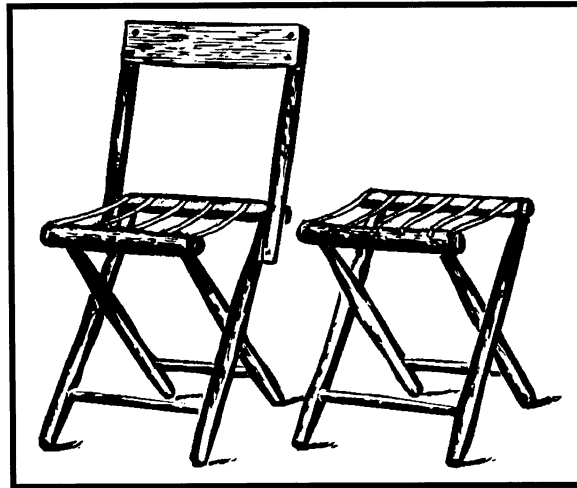


Figure 5.1

- a) State FOUR factors which, in your opinion, should have played a role in designing and developing this piece of furniture. (4)
- b) Briefly discuss the following principles of design, which are applicable to the camp-stool:
- i) Functionality
 - ii) Appearance
 - iii) Material
 - iv) Construction (8)
- c) In case "riempies" are not available, what other solution would you offer. (2)
- d) What will the ideal height for the stool be? (2)

5.1.2 The modern times we are living in play a determining role in the designing and manufacturing of furniture. In the light of modern techniques, the use of machines and the huge demand for furniture, state SIX characteristics of contemporary furniture. (6)

5.2 Verduursaming

- 5.2.1 Waarom word hout gepreserveer? (2)
- 5.2.2 'n Goeie preserveermiddel moet aan sekere vereistes voldoen, noem SES. (6)
- 5.2.3 Preserveermiddels kan in DRIE klasse verdeel word, noem hulle. (3)
- 5.2.4 Watter behandelingsmetode sal jy aanbeveel vir hout wat moeilik 'n preserveermiddel absorbeer? (1)

5.3 Afwerking:

'n Meubelstuk moet met 'n vernis finaal gepoleer word. Beskryf kortliks hoe jy dié proses sal uitvoer onder die volgende hoofde:

- 5.3.1 Voorbereiding van die hout
- 5.3.2 Die eerste laag bedekkingsmiddel
- 5.3.3 Tweede en derde laag bedekkingsmiddel. (6)

[40]**TOTAAL: 200 ÷ 2 = 100**

5.2 Preservation:

- 5.2.1 What is the reason for preserving wood? (2)
- 5.2.2 State SIX properties a good preservative should have. (6)
- 5.2.3 Preservatives can be grouped into THREE classes, name them. (3)
- 5.2.4 Which method of preservation will you recommend for wood that does not absorb a preservative easily? (1)

5.3 Finishing:

A piece of furniture must finally be finished with a varnish. Briefly describe the process under the following headings:

- 5.3.1 Preparation of the wood
- 5.3.2 The first layer of protective coating
- 5.3.3 Second and third layers of protective coating (6)

[40]**TOTAL: 200 ÷ 2 = 100****END**