



GMA 320
Eksamen 2005 / Exam 2005
Afstandswaarneming II / Remote Sensing II

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TYD/TIME: 120 Min

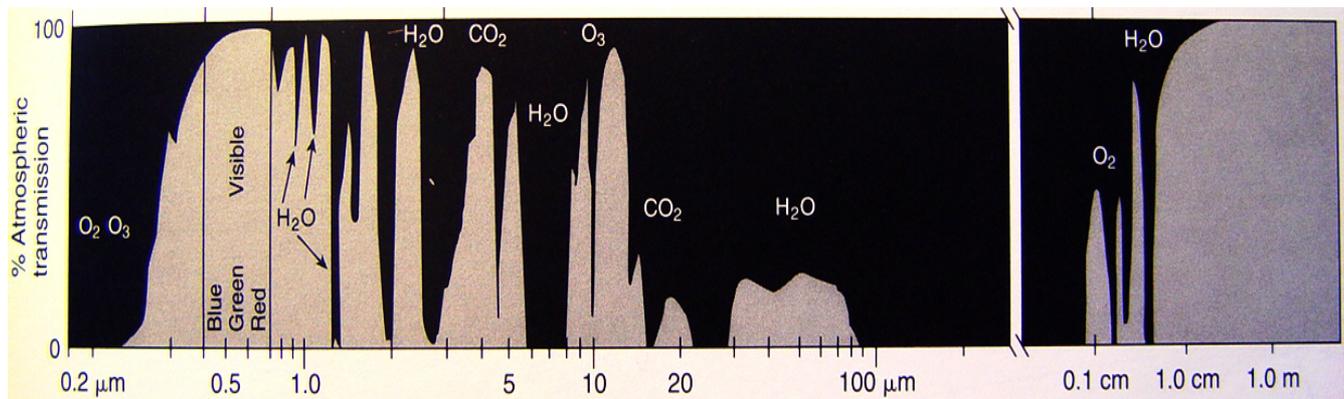
DATUM/DATE: 31.10.2005

PUNTE/MARKS: 120

Question 1 / Vraag 1

Use the graph given below to discuss the possibilities of active and passive remote sensing applications in general.

Gebruik die gegewe grafiek om die algemene moontlikhede van aktiewe en passiewe afstandswaarnemingstoepassings te bespreek.



Punte / Marks 15

Question 2 / Vraag 2

Explain in detail two of the four types of resolution of remote sensing data and their effect on practical applications, including digital image processing.

Bespreek twee van die vier tipes resolusies van afstandswaarneming en hul effek op die praktiese toepassing daarvan, digitale beeldprosessering ingesluit.

Punte / Marks 12

Question 3 / Vraag 3

Interpret the satellite image which was handed out and include an explanatory sketch (1 page) with a legend.

Interpreteer die satelliet beeld wat uitgedeel is en sluit ook 'n verklarende skets (1 bladsy) met 'n legende in.

Punte / Marks 18

Question 4 / Vraag 4

For stereoscopic analysis, which types of sensors and remote sensing data could you choose and what would be their respective limitations?

Vir stereoskopiese analise, watter tipe sensor en watter tipe satelliet data sal jy kies, en wat is hulle onderskeie tekortkominge?

Punte / Marks 12

Question 5 / Vraag 5

What **sensor requirements** do you need, which **satellite data** would you choose and **how (in practical steps)** would you map or monitor...

- 5-1. ...the detailed spatial extent of flooding and devastation of a small town in Florida, U.S.A., caused by the three hurricanes in the past 10 days.
- 5-2. ...the annual amount of illegal deforestation in Indonesia, from 1990-2000.
- 5-3. ...the damage for the grazing potential of a small private game reserve in the North West Province, caused by bush fires from June to Oct 2005.
- 5-4. ...the present (2005) situation of desertification in northern Namibia, as compared to 1975.
- 5-5. ...the annual growth rate of a certain squatter camp on the outskirts of Durban, since 1998.
- 5-6. ...the spatial extent of a 10m wide, mostly sand-covered mineral-bearing dyke in the Kalahari.
- 5-7. ...the spatial extent and movement of an oil spill threatening the Eastern Cape coast, caused by an oil tanker accident in rough seas.

Give detailed reasons for your answers. Note that there might be more than one sensor option.

*Watter **tipe sensor** kwaliteit het jy nodig, watter **tipe satellietdata** sal jy kies en **hoe (praktiese stappe)** sal jy die volgende gebeurnisse karteer of monitor...*

- 5-1. *..die ruimtelike omvang van vloedtoestande en vernietiging van 'n klein dorpie in Florida, V.S.A, wat veroorsaak is deur die drie orkane in die laaste 10 dae.*
- 5-2. *..die jaarlikse hoeveelheid onwettige ontbossing in Indonesie, 1990-2000.*
- 5-3. *..die skade wat veldbrande tussen Junie en Oktober 2005 aan die weidingspotensiaal van 'n klein privaat wildreservaat in die Nordwes Provinsie aangerig het.*
- 5-4. *..die toestand van verwoestyning in noordelike Namibië in 2005, in vergelyking met dié in 1975.*
- 5-5. *..die jaarlikse groeikoers van 'n sekere plakkerskamp in die omgewing van Durban, sedert 1998.*
- 5-6. *..die ruimtelike omvang van 'n 10 m wye gang met ontginbare minerale in die Kalahari, wat in baie plekke met sand bedek is.*
- 5-7. *..die ruimtelike omvang en beweging van 'n olie besoedeling wat die Oos Kaapse kuslyne bedreig as gevolg van 'n olie tenkskip ongeluk in stormagtige see.*

Gee redes vir jou antwoorde. Let daarop dat daar meer as een sensor moontlik kan wees.

Punte / Marks 63 (9 for each challenge)