



Province of the
EASTERN CAPE
EDUCATION

IBAKALA ELIPHAKATHI

IBANGA 6

NOVEMBA 2016

INZULULWAZI NETEKNOLOJI

AMANQAKU: 80

IXESHA: 2 iiyure



Eli phepha lemibuzo linamaphepha ayi 10.

IMIYALELO

1. Funda YONKE imibuzo ngokugqibeleleyo phambi kokuba uqalise ukuphendula imibuzo.
2. Phendula YONKE imibuzo KWINCWADI YEEMPENDULO.
3. Nombola iimpendulo ngokuchanekileyo njengoko kwenziwe kwiphepha lemibuzo.
4. Bhala ngokucocekileyo nangokucacileyo.

ICANDELO A**UMBUZO 1**

Iindidi zeempendulo zinikiwe njengeempendulo yemibuzo elandelayo. Khetha impendulo echanekileyo uze ubhale unobumba (A ukuya ku D) KUPHELA omele impendulo impendulo yakho echanekileyo ecaleni kombuzwana (1.1 ukuya ku 1.5) KWINCWADI YEEMPENDULO. Umzekelo 1.6 E.

- 1.1 Indlela yokuhambisa i-eneji yombane yaziwa ngokuba yi ...
- A aplayensi (appliance).
 - B amandla ombane (electric current).
 - C iseketi yombane (electric circuit).
 - D khomponethi (component).
- 1.2 Isizathu sokuba ucingo lwekopolu lusetyenziswe kukhulu njengesinikezeli sombane kungokuba ...
- A ikopolo yi-insuleyitha/ sisigqumi (insulator).
 - B ikopolo iyabengezela.
 - C ikopolo inikezela umbane ngokulula.
 - D ikopolo ayiyomagnethi.
- 1.3 Enye yezi zixhobo zilandelayo isetyenziswa ukuvelisa i-eneji yengxolo (sound energy) ukunceda ukuba sikhusele amakhaya ethu ekuqokezweni:
- A Amasango ombane (Electric gates)
 - B li-alamu (Alarms)
 - C lirobhothi (traffic lights)
 - D Izibane zasezitatweni (Street lights)
- 1.4 Incinci, inamatye, ijikeleza ilanga phakathi kukaMbovane (Mars) noMbalibusuku (Jupiter) ibizwa ...
- A liplanethi (planets).
 - B Imeteorites (meteorites).
 - C I-asteroid (asteroids).
 - D Inyanga (the moons).
- 1.5 Iplanethi UMhlaba (Planet Earth) ijikeleza iLanga kwi-obhiti (orbit). Umjikelezo omnye opheleleyo uthatha ...
- A $364\frac{1}{4}$ yeentsuku.
 - B $365\frac{1}{2}$ yeentsuku.
 - C $365\frac{1}{4}$ yeentsuku.
 - D 365 yeentsuku.

(5 x 1) [5]

UMBUZO 2

Thelekisa okunikwe kukholam A nebinzana elikukholam B. Bhala unobumba (A ukuya ku F) wempendulo yakho ecaleni kombuzwana (2.1 ukuya ku 2.5) kwiNCWADI YEEMPENDULO, umz. 2.6 G.

KHOLAM A		KHOLAM B	
2.1	Ivela kwizinto eziphilayo ezafayo kwiminyaka engamawaka eyadlulayo	A	Astronaut
2.2	Ingabonwa emhlabeni kuba ukukhanya okuvela elangeni kukhanyisa kuyo	B	Fossil fuel
2.3	Isetyenziswa ekujongeni ispeyisi (space) nokuqokelela ulwazi	C	Revolution
2.4	Iseli (cells) ezimbini nangaphezulu zikhonethwe (connected) ndawonye	D	Space Rover
2.5	Isetyenziswa ukuqokelela amatye neesampuli (samples) zomhlaba ize ithathe neefoto zenyanga noMbomvane (Mars)	E	Moon
		F	Telescope
		G	Battery

(5 x 1)

[5]**UMBUZO 3**

Sebenzisa uluhlu lwamagama ukugqibezela izivakalisi ezingezantsi zibe zezichanekileyo.

Igenereyitha likhomponethi (Components) uNozantya/IMetyhuri (Mercury)	Izigqumi zombane (Electrical insulators)	Iisimboli Turbine UMhlaba(Earth)
-----------------------------------------------------------------------------	------------------------------------------	----------------------------------------

- 3.1 ... zikonethwa (connected) ndawonye ukugqibelelisa isekethi yombane (electric circuit). (1)
- 3.2 ... zisetyenziswa xa kuzotywa idayagram yesekehi yombane (circuit diagrams). (1)
- Kwizitishi zombane (power stations), amalahle asetyenziswa ukubilisa amanzi. (2)
- Umphunga (steam) ujijja i (3.3 ...) ize yona ijije i (3.4 ...) ekhupa umbane. (1)
- 3.5 Eyona planethi ikufutshane kuMhlaba (Earth) yi/ngu ... **[5]**

AMANQAKU ECANDELO A: 15

ICANDELO B

UMBUZO 4

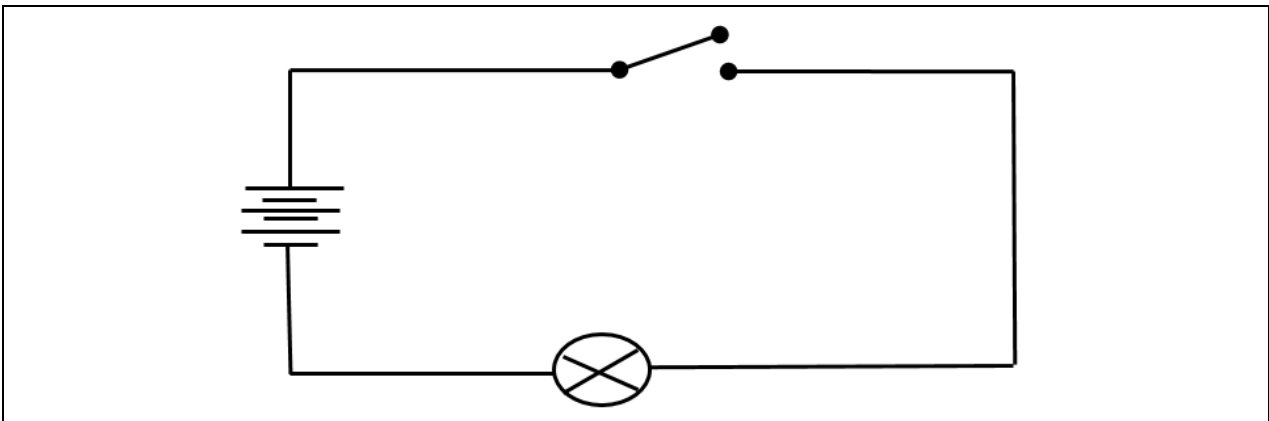
Bhala isigama senzululwazi (scientific word/s) kwibinzana ngalinye kula alandelayo:

- 4.1 Ikhomponethi (component) elawula (controls) ukuhamba (flow) kombane (1)
- 4.2 Imathiriyeli (material) apho athi amandla ombane (electric current) akwazi ukudlula kuyo (1)
- 4.3 Usetyenziso lwamanzi abalekayo ukuphehla umbane (1)
- 4.4 Iintsimbi ezinkulu ezingathi zithawa (tower) ezixhasa iikheybles (cables) zombane (1)
- 4.5 Ukuspina koMhlaba kwi-aksisi (axis) yawo (1)

[5]

UMBUZO 5

Qwalasela le dayagram yasekethi ingezantsi uze uphendule imibuzo elandelayo.






- 5.1 Zingaphi iiseli (cells) ezikule sekethi? (1)
- 5.2 Yintoni umsebenzi webhetri kwisekethi? (1)
- 5.3 Kutheni kufuneka sibeneqoshana lolawulo (control device) kwisekethi? (1)
- 5.4 Sesiphi isixokolelwano esikhupha i-output eneji (energy)? (1)
- 5.5 Ingaba amandla ombane ayahamba (flow) kwisethi engentla? (1)
Cacisa impendulo yakho. (2) (3)
- 5.6 Nika isizathu kutheni umlungisi mbane kufuneka asebenzise iidayagram zisekethi xa esebenza ngombane. (2)

[9]

UMBUZO 6

Qwalasela imifankiso engezantsi uze uphendule okulandelayo.

 <p>iglas</p>	 <p>Inkonxa yesiselo</p>	 <p>Imali ezigqekembe(coin)</p>
 <p>imela</p>	 <p>ibholipeni</p>	 <p>Irabha yokucima</p>

- 6.1 Nika izinto zibeMBINI kwezi zingentla ezingasebenza njengezinikezeli zombane (conductors) nezinye eziMBINI ezingasebenza njengezigqumi zombane (insulators). (2 x 2) (4)
- 6.2 Xela isizathu sibesiNYE kutheni uzahlule njengezinikezeli zombane nesiNYE isizathu kutheni uzahlule njengezigqumi zombane. (1 + 1) (2)
- 6.3 Yeyiphi imathiriyeli esisigqumi sombane (insulator) kwibhalbhu? (1)
- [7]**

UMBUZO 7

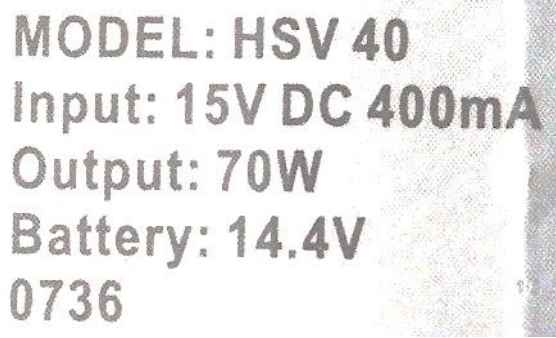

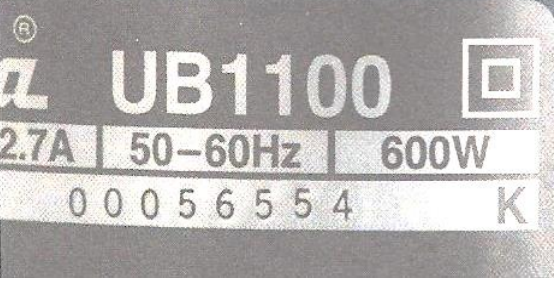
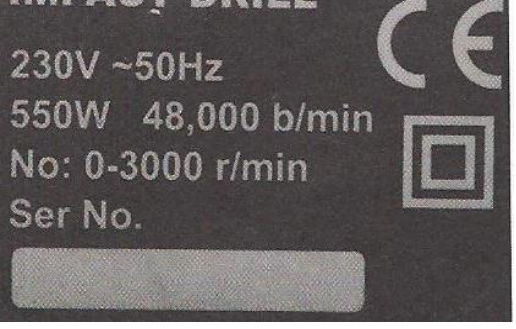
Umabona kude (TV) ngumzekelo we sistimu yombane (electric system).

- 7.1 Bonisa i-**input**, **process** ne **output** yeseti yeTV (TV set). (3)
- 7.2 Xela umzekelo ubemNYE wento (object) ensekethi yombane (electric circuit) ekhupha ushukumo (movement). (1)
- 7.3 Zoba iidayagram zeesistimu zebhalbhu (light bulb system). (3 x 1) (3)
- 7.4 Zoba isimboli yebhalbhu. (1)
- 7.5 USakhie ungumfundi webanga 6 eCaley JSS. Uvavanye i-alamu kowabo. I-alamu ayisebenzanga xa amandla ombane ebehanjiswa kwisekethi. Cebisa uxela izizathu zibeMBINI ezenza ukuba i-alamu ingasebenzi. (2 x 1) (2)

[10]

UMBUZO 8

- 8.1 Nika iindlela zibeMBINI esingawonga ngowo umbane. (2 x 1) (2)
- 8.2 Yahlula phakathi kwezi zigama:
- 8.2.1 Imithombo yamandla ehlaziyekayo (Renewable resources) (1)
- 8.2.2 Imithombo yamandla engahlaziyekiyo (Non-renewable resources) (1)
- 8.3 Jonga iilayibhile (labels) ezingezantsi uze uphendule imibuzo.

 <p>ISIBANE</p>	 <p>UNOMATHOHOLO</p>
 <p>I-AYINI</p>	 <p>HAIRDRYER</p>

- 8.3.1 Zoba itheybhile uthelekisa amandla ombane (wattages) akwezi zixhobo zombane. (1 mark each) (4)
- 8.3.2 Ungagqiba uthini ngeziphumo ezahlukeneyo zezi zixhobo ziboniswe kwitheybhile? (2)
- 8.3.3 Nika iingozi zibeMBINI zokutsala umbane ngokungekho mthethweni. (2)
- [12]**

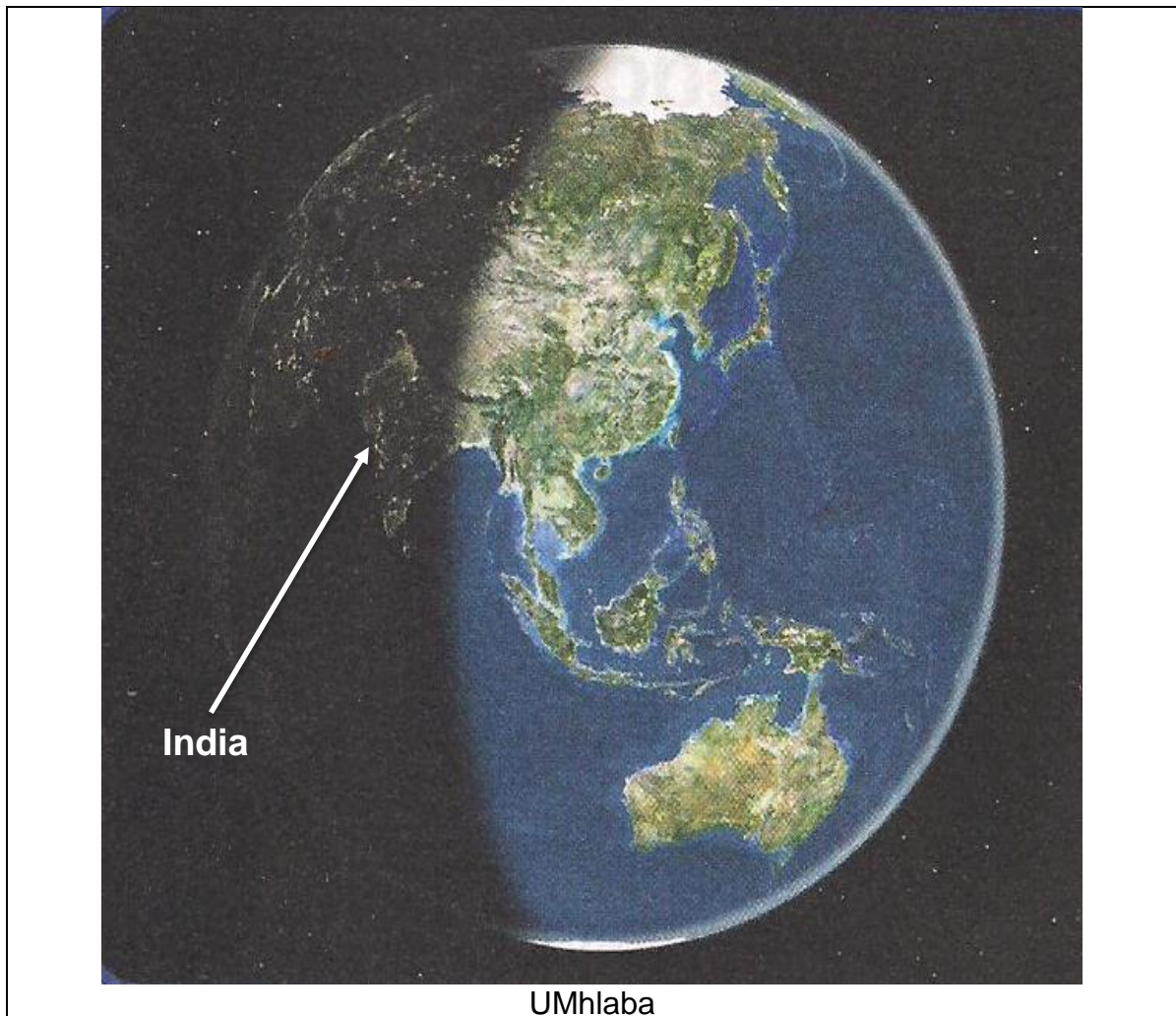
UMBUZO 9

9.1 Iiplanethi Mbalibusuku (Jupiter), Mathambeka (Uranus), Sondzondzobila (Neptune) no Nozangqa (Saturn) zizangxa zegesi (gas giants).

Nika iindlela zibeNTATHU ezahluke ngayo izangxa zegesi kwezinye iiplanethi.

(3 x 1) (3)

9.2 Qwalasela umfanekiso woMhlaba ongezantsi.



9.2.1 Uqaphela ntoni kulo mfanekiso? (1)

9.2.2 Kutheni elinye icala loMhlaba limnyama (dark)? (1)

9.2.3 Ingaba i-India ikwicala elikhanyayo akanye kwicala elimnyama? (1)

Ingaba kusemini okanye ebusuku? (1) (2)

[7]

UMBUZO 10

Zoba idayagram ephelileyo ebonisa ujikelezo loMhlaba neNyanga (Moon).

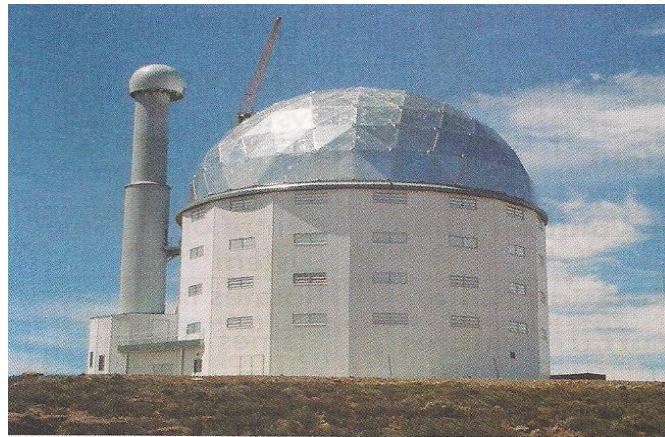
Leybhelisha uMhlaba, iNyanga neLanga kunye nee-obhiti (orbits) zoMhlaba neNyanga. **[6]**

UMBUZO 11

Funda yonke icase study ngononophelo uze uphendule imibuzo elandelayo.

Ezona telescopes zinkulu eMzantsi Afrika

Eyona **Telescope iNkulu yaseMzantsi Afrika /Isibonakude esikhulu saseMazantsi e-Afrika** (iSALT) yistate-of-the-art scientific instrument. ISALT sakhwiwe kufutshane neSutherland kwiphondo laseMntla Koloni. Esi sakhwiwo sakhethwa ngenxa yesibhakabhaka saso esiqokelela ukukhanya kunaso nasiphina isibonakude esikhoyo siphinde sikwazi ukubona izinto aziluzizi kakhulu. ISALT yenye yezibonakude ezinkulu kwihlabathi lonke. ISALT ingakwazi ukubona ikhandlela elilayithiweyo liseNyangeni ilapha yona. Kungoko kubalulekile ukuba sibenophahla olungakhanyayo nokuba sibe kwindawo engenazikhanyiso zadolophu ezikufutshane.

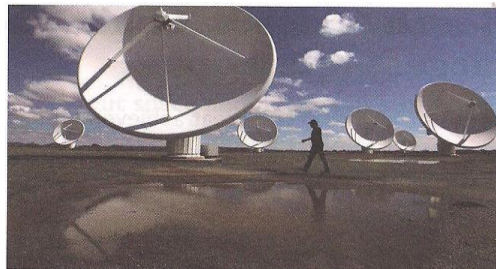


ISouthern African Large Telescope (SALT) eSutherland

ISquare Kilometer Array Radio Telescope (okanye SKA)

Inamawaka oonomathotholo abamkela ingxolo nemifanekiso eziseMzantsi Afrika, nakwezinye iindawo zehlabathi, nakwiikhontinethi (continents) ezine ezahlukeneyo. Izitya ziyakudityaniswa kwiradio telescope system enye enkulu. Ziyakudityaniswa ngesantya esikhulu seekheybhule zedata, ize idata iprowuseswe ngeekomputha ezikhawulezayo ezifumanekayo. Izitya ziyakudityaniswa zonke zenze isikwere sekilomitha sesafeysi eriya (square kilometer of surface area). Oku kukhulu kangaka kuya kucanda ihlabathi lonke kusenza iSKA ibenamandla aphindwe kayi 50 ngaphezulu, nangokukhawuleza okuphindwe kayi 10 thousand kunezinye iiradio telescope.

KAT-7 (**Karoo Array Telescope**) yindawana yeSKA kwaye kudala isebenza. Inezitya zokukhongozela eziyi7. IMeerKat nayo iseKaroo, izakuba nezitya zokukhongozela eziyi64 izakugqitywa ngo2016.



IRadio receiver dish ye KAT-7

- 11.1 Amele ntoni lamagama ashunqulelweyo? SKA, KAT and SALT. (3 x 1) (3)
 - 11.2 Xela kutheni iSALT yakhiwa kufutshane neSutherland. (1 x 1) (1)
- [4]**

UMBUZO 12

- 12.1 Ukuba ungasqeshwa ube ngumenzi (umakhi) weRobot Vehicle engathunyelwa kuMbomvane (Mars), xela izinto ezibalulekileyo (key features) zibeMBINI ongazifaka kwinqwelo yakho. (2)
- 12.2 Thelekisa iimoon rovers nee Mars rovers ngokugqibezela oku kulandelayo:
- 12.2.1 IiMoon rovers nee Mars rovers ziyafana ngoba ... (2 x 1) (2)
- 12.2.2 IiMoon rovers nee Mars rovers azifani ngoba ... (1 x 1) (1)
- [5]**

AMANQAKU EWONKE WECANDELO B: 65
AMANQAKU APHELELEYO EWONKE: 80

