



# FLOURISH OF EXCELLENCE EXAMINATIONS BOARD

## INTEGRATED SCIENCE FINAL RESEARCH WORK ON DIFFERENT SCIENCE TOPICS

### INTEGRATED SCIENCE KEY FACTS ABOUT SOME TOPICS.

#### 1. FACTS ABOUT STORAGE REPRODUCTION OF SOUND

- ✓ We know that sound is produced by vibrating objects.
- ✓ We also know that objects can be made to vibrate by using mechanical, magnetic and electrical energy.
- ✓ We can therefore store sound in the form of mechanical, magnetic and electromagnetic energy.
- ✓ These energy can then be made to vibrate appropriate devices later to reproduce the original sound.
- ✓ The storage is therefore possible through: **Magnetic, Electromagnetic and mechanical method**

#### NOTE THAT:

- ✓ Depending on the quality of sound recorded you may even have to edit the sound.

#### 1. MAGNETIC METHOD

Basing on other methods we know that in all methods of storing sound recording must happen or must take place. So we don't call recording a method of storing sound remember may be we want to record the sound to be used in ten (10) years to come we must record the sound. Now what is critical about recording is that how are you recording this sound that determines the method. If you look at the **magnetic method** the previous cassettes the compacts which we use to use to play music from the **1990s** in those compacts sound is captured inform of magnetism in the tape. That tape is a magnetic tape so what we are calling as sound is converted inform of magnetic energy and it's stored in a tape that is why the method is called magnetic method.

#### 2. PHYSICAL OR MECHANICAL METHOD

In physical method the sound is captured in form of holes which are made on the disc. Now in those holes since they are the physical holes and for us to produce sound we have to make some movements by moving physically that is why the method is called **physical** or **mechanical method**.

**NOTE THAT.**

- ✓ In all different methods of storing sound recording must take place that is why don't call recording a method of storing sound.

**NOTATION**

**Why is notation not a method of storing sound?**

- What we need to know is that in notation if I am the composer of the song remember previously there were **NO** machines for recording.
- Now if I am the composer of the song **OH UGANDA MAY GOD UP HOLD THEE**. Not that in this song I expect people to sing it the way I want it to be sang but if I write for a person the words **OH UGANDA MAY GOD UP HOLD THEE** how will a person know that these words are to be sang in this way then because of the musicians they develop some **NOTES** like the **Doh Ray Me Fah Soh Lah Te Doh**. Now **Doh Ray Me Fah Soh Lah Te Doh**. Now if I have **OH UGANDA**. I have to put this song OH UGANDA in form of **Doh Ray Me Fah Soh Lah Te Doh**. So that if you know how "**Do**" sounds "**Re**" sounds and "**Me**" sounds and I also tell you how long each of the beats "**NOTES**" take yes maybe **Oh Uganda** and you are saying **Do Do Re Ro** something like that. Now if you know how "**Do**" sounds and "**Me**" sounds and I showed you when you are singing "**Oh Uganda**". These are the **NOTES** it means you can be able to sing the song "**Oh Uganda**" the way I intended the song to be sang but you are singing it in your own voice.
- So in notation method I have not stored sound my sound I have only given you **guidance** and if you are to sing this song how do you sing it the way I want it to be sang.
- So notation is not the way of storing sound. But it is the way of writing music.
- But what we also need to understand is that every music is sound **BUT** not all every sound is music

**FOR EXAMPLE.**

- When a car passes by you the car makes some sound but that sound produced by the car is **NOT** music.
- So if you start talking to a person right now note that the two of you will be producing sound or if I start talking to you now we are going to be producing sound but the sound we have produced is not music. We cannot write the communication of OURS in form of **Doh Ray Me Fah Soh Lah Te Doh** that does not happen.
- ❖ So I want to start by what storage of sound is not.
- ❖ Storage of sound is the method are not **RECORDING** and **NOTATION**. As I have already explained in my previous presentation that you have read.

- ❖ So what are the methods, they are basically three. But what we need to know is that they keep on changing as new methods come on board now there is even **DIGITAL** method but the first three were **Mechanical, Magnetic** and **electromagnetic** method.
- ❖ The physical methods we used to use the Old machines called **GRAMOPHONES**.
- ❖ **Gramophones** were used in the **1970s** and early **1980s** and then later the **gramophones** did not last longer because they were bulky and the quality of the music was not very good that is why they did not last longer and not that they were not durable now we went to the **Magnetic method**, the magnetic method were the ones that uses the tapes and those tapes were for both **VIDEOS** and **AUDIO** tapes and they were black magnetic tapes and later **magnetic method** was left.
- ❖ Note that most of the methods we are using now is **electromagnetic method** that is where the **CDS** belong

## **MORE ABOUT STORAGE OF SOUND**

### **1. Magnetic method**

- ❖ In this method sound is stored on a plastic tape coated with magnetic material.
- ❖ The coating of the tape is magnetized and the intensity of magnetization on the tape varies with frequency and amplitude of sound waves.
- ❖ To produce the sound, the magnetized tape moves against a coil.
- ❖ This will cause electric signals to be produced in the coil.
- ❖ The electric signals can then be amplified and reproduced on loudspeaker.

### **2. Electromagnetic method**

- ❖ In this method sound is stored on a special plastic disc with the use of a laser light.
- ❖ Tracks are created on the disc giving patterns corresponding to the wavelength and amplitude of the sound being recorded.
- ❖ During the process of recording sound, sound waves are converted into electromagnetic signals (laser light).
- ❖ The electromagnetic signals burn will burn the grooves on a disc to form a pattern called **music track** that will correspond to the sound.
- ❖ The sound stored on a laser disc is reproduced by directing a weak laser beam on the disc.
- ❖ The disc will reflects the waves corresponding to the width of the grooves burnt on the disc.
- ❖ The electric signals are then amplified as transmitted to the loudspeakers to produce the sound.

### **3. Mechanical or physical method**

- ❖ In this method sound is stored on a plastic disc in form of grooves made on the disc by mechanical or physical means. This pattern of grooves is determined by the frequency and amplitude of the sound being recorded.
- ❖ To reproduce the sound, a style or needle will move along the grooves as the disk turns.
- ❖ The movement of the needle follows the waves in the grooves and will produce electrical signals which will correspond to the waves in the grooves.
- ❖ These signals can be amplified and heard on loud speaker

## **2. FACTS ABOUT TUBER CROPS**

**Tuber crops are swollen underground roots or stem with stored food**

### **A. A COCOYAM AS A STEM TUBER CROP.**

**What makes a coco yam to be grouped under stem tubers?**

- The stem of a coco yam is under ground and its leaves develop from the underground stem and the underground stem has nodes **NOTE** any plant in science that has nodes is a stem remember a coco yam has some rings which is seen on the swollen parts and the swollen parts are the nodes where the leaves and the buds develop from you will note that with time, the stem keeps on storing food made the by leaves which will make the stem to increase in size and swells note that the underground stem swollen with stored food in the classification of crops or plants is called a stem tuber and therefore, a cocoyam is an example of stem tuber.

### **B. A WHITE YAM AS A ROOT TUBER CROP**

**What makes a white yam to be grouped under root tubers?**

- A white yam has aerial stem and its stem grows above the ground note that it has a weak stem where the leaves grow from the stem and its stem is not underground, its stem is not swollen and that is why it cannot be grouped under stem tubers when you check the roots of a white yam properly you will notice that they are swollen with stored food and therefore a white yam is a root tuber not a stem tuber.

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FOR Any complain about the above research call any of the above contacts **CEO flourish examination board African Uganda Ltd. Note that I did not come up with this information alone but through the guidance and conversation I made during my research to clear confusion among teachers that this research is known by most of the UNEB CHIEFS, Officials and Head of Department curriculum developer of NCDC Uganda anyone who needs to know more about this information can consult any of the UNEB chiefs Uganda and SANTUS curriculum developer**

**NB: Get most of them in Teach and learn science teachers forum, Science mentors teachers forum, Common mistakes in Science and 21<sup>st</sup> century teachers forum for any complaint about the above information.**