

BASIC 9 1ST TERM BIOLOGY NOTE

Week ONE— Family Traits

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WEEK ONE AND TWO

FAMILY TRAITS

A family trait is a genetic likeness that is passed through the parents' genes to their children or offspring. The traits that are being inherited are present in form of genes. Genes are the hereditary unit.

The characters or traits that can be passed from the parents to the offspring include the following;

I- Skin colour(dark or fair)

ii-Height (tallness or shortness)

iii- Colour of the skin, hair, eye iris colour

Iv-Shape of the face, eye ball, mouth, eyelashes, lips, forehead, head, ears etc

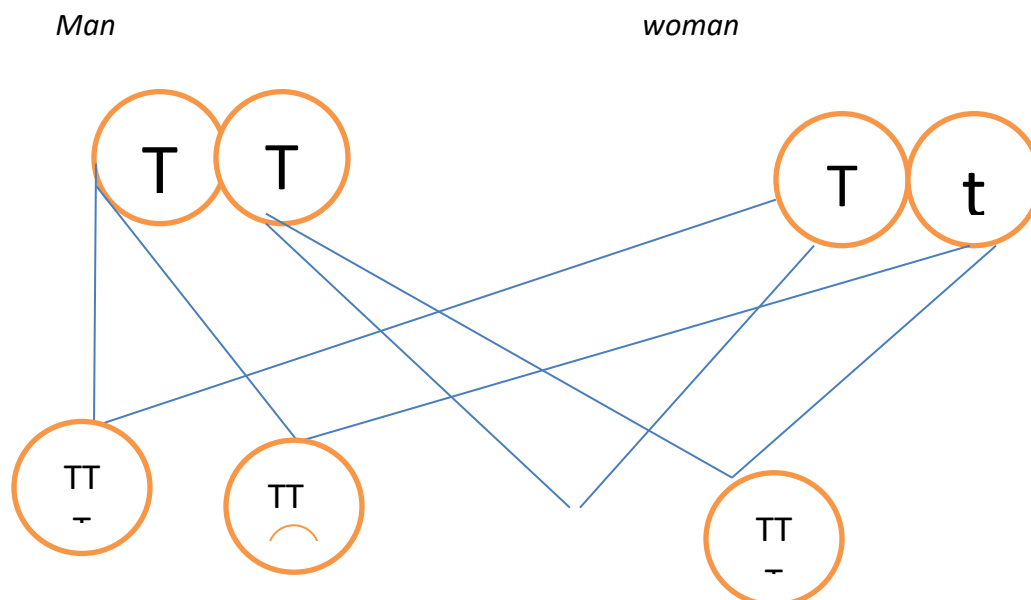
v- Method or style of walking.

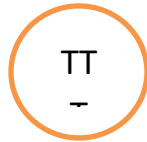
Vi-Quantity of hairs on the head, body, eyebrow and eye lashes.

Vii-Voice

Viii-Abnormalities such as albinism, sickle cell anemia, colour blindness, hemophilia.

Dominant Trait is trait that keeps on appearing among the family in each successive generation. For instance, if a dominant tall man with dominant gene (TT) Marries a tall woman who has a recessive trait for shortness (Tt). If they produce four children all of them will be tall. This shows that the gene for tallness is dominant over the gene for shortness.

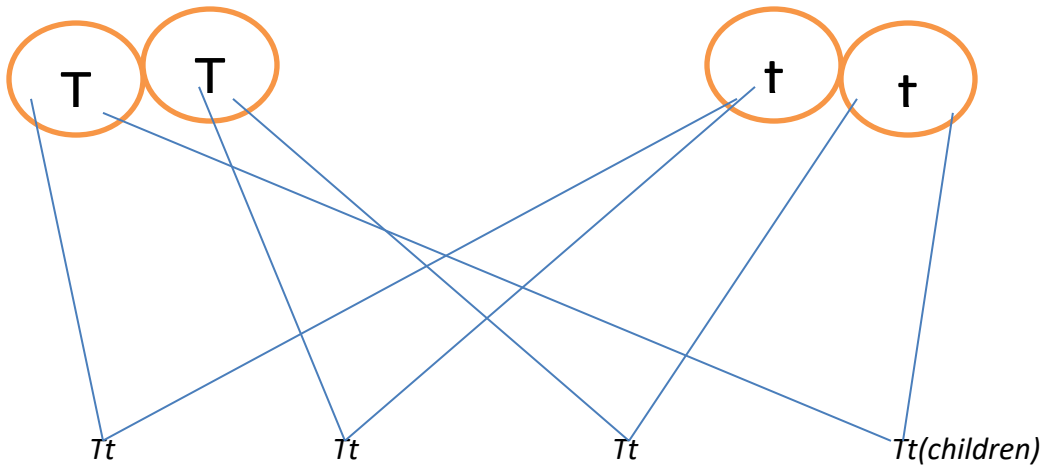




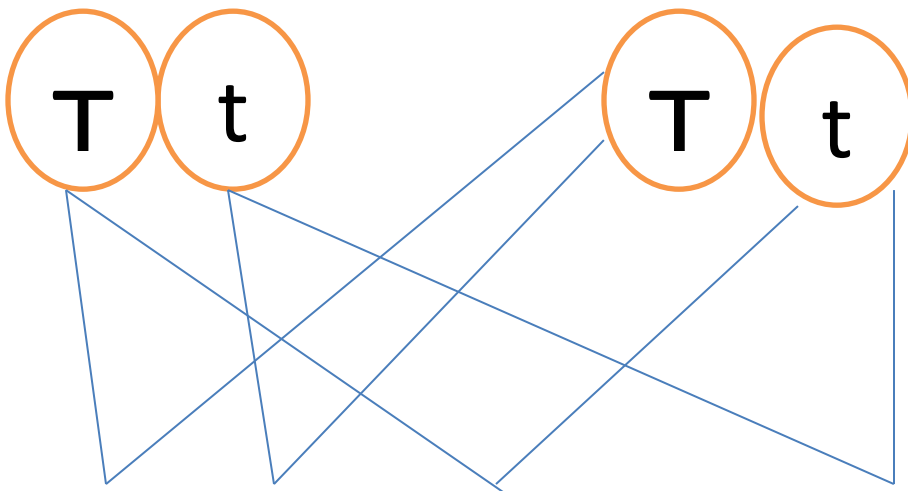
Recessive Traits are those traits that are still present in an organism but do not appear physically because of dominant gene. It may suddenly appear in successive generation. For example, if a tall man marries a short woman, they may not produce any short child. But their children have the recessive traits or genes that may produce short children in the second generation.

man (TT)

woman (tt)



All the offspring are tall with recessive gene.



TT

Tt

Tt

tt

3 children are tall, 1 child is short.

Differences Between

<i>Dominant Gene</i>	<i>Recessive Gene</i>
<i>1.It is able to express itself even the presence of recessive gene</i>	<i>It is unable to express its effects in the presence of dominant gene</i>
<i>2.It does not require another to produce its effect on phenotype</i>	<i>It produces its phenotypic effects only in the presence of similar gene</i>
<i>3.Domnant gene can form complete polypeptide or enzyme for expressing its effects</i>	<i>Recessive gene forms an incomplete or defective polypeptide or enzyme so that the expression consists of absence of dominant gene.</i>

Importance of Family Trait

-It helps us to understand some genetic disease.

-It can be used to trace family genealogy.

-It can used to trace the manifestation of physical character such as colour of the eye, skin, hair, body size and height

-The knowledge of family trait can be used to detect crime by finger print or DNA test.

-Good trait such as intelligent and other good traits are continuously being transferred in a family.

ASSIGNMENT

1. Which of the following is not a trait that is transferred genetically from parents to offspring?
A. skin colour B. height C. colour blindness . D. Smoking
 2. Variation like height and skin colour among members of the same family that change from one end of the scale to the other are A. recessive B. Continuous C. discontinuous. D. Genotype
 3. The genetic make-up of an individual can be altered by A. the environment B. enzymes C. exercise D. food
 4. Which of these is a genetic disease? A. sickle cell anemia Malaria C. headache Kwashiorkor
 5. Which of the following is not a physical characteristics in family trait? A. skin . B. hair. C. Dentition D. height
 6. A trait that appears in successive generation is called A. recessive Dominant trait Physical trait D. genotype
 7. Family traits are important to all of the following except in A. intelligence. B. Disease control C. resemblance D. hunger control
 - 8a. Define family trait
- state two significance of family traits to intending couples
- c. State two differences between dominant and recessive genes
- state five examples of traits that can be transferred from parents to offspring.

WEEK THREE AND FOUR

DRUG AND SUBSTANCES ABUSE (!)

A drug is a chemical substance which affects the action of the body. Or a drug is defined as any substance that causes physical and mental changes in the body. If drugs are used under proper medical supervision they can serve the following purposes;

i—To save life ii—To relieve suffering due pain iii-To combat disease (fight against diseases)

Drug abuse is defined as the usage of drug without regard to medical prescription. Or Drug abuse may also be defined as excessive and persistent use of for purposes is not intended.

Types of Drug

i-Licit drugs are drugs that produced, sold and used legally to treat diseases. Examples; paracetamol, panadol, antibiotics, anti-malarial

ii-illicit drugs are drugs that are produced and sold illegally. Such drugs used to alter the state of consciousness. Examples; Indian hemp, cocaine, heroin, valium and madras. These drugs are known hazard drugs.

Substance abuse is the abuse of all substances apart from drugs. Other substances which can be abuse includes sugar, soft drinks etc.

Drug addiction or Substance dependence is defined as a drug user's compulsive need to use controlled substance in order to function normally. Drug addiction is a state of physical or psychological dependence o a drug.

Causes of Drug abuse

i- Curiosity is the desire of the youth to have a taste.

ii-Lack of self-confidence especially talking to opposite sex e.g. girlfriend, talking in public.

Influence from peer pressure may make some youth to become smokers and drunkards.

lii-Excitement in order to feel good.

Iv-Frustration and stress.

Effects of Drug Abuse.

i-It may lead emotional problem such as anxiety, depression, mood swing, suicidal thoughts and schizophrenia(mental illness).

ii-It may lead learning problem.

iii-It may cause uncontrollable sexual urge.

iv-It can lead to health problem such as stomach upset, damaged nostrils and lungs and skin rashes.

v-It car accident.

Prevention of Drug Abuse

I-Inculcation of coping skills i.e. youth must have strong determination to stop the abuse of drug.

ii-By engaging in positive social interaction i.e. youth should do away with peer partners that can lure them into drug taking.

iii-By embracing healthy lifestyle through the following means

-youth should control their desire and appetites

-They should avoid smoking and excessive drinking of alcohol

-Youth should avoid self-medication when they are sick.

Strategies For a Healthy Drug –Free Life

-Seek counsel

-Stay engaged

-Educate yourself

-Setting achievable goals

-Spend time with the family and love ones

-Avoid temptation

-Exercise yourself in order to reduce stress.

ASSIGHMENT

1. Which of the following is a hard drug? A. cocaine B. penicillin C.aspirin D.tetracycline

2. Modes of drug abuse include the following except. A sniffing B. self-injecting . C oral. D. doctor's prescription.

3.The following substances are natural drugs except A. kolanut B. tobacco C.Indian hemp D.paracetamol.

4.Which of the following agencies monitors the movement of hard drugs in and out of the country? A. Nigeria immigration service B. federal road safty corps C. NDLEA D.Nigeria Airways.

5. Which of the following is not one of characteristics of healthy lifestyle? A. Avoiding self-medication B. Smoking and excessive drinking of alcohol C. Eating good food always D. Proper control of one's desire and appetite

Drug Control Agencies

There are two notable drug controlling agencies which established prevent the influx of fake, adulterated and hard drugs. The two agencies are;

i-NAFDAC (-National Agency for Food Drug Administration and Control)

Functions

- The agency make sure that adulterated foods are not sold to the public.
- It ensures that proper quality control of manufactured food is maintained in the industries.
- It makes sure that expired drugs and food are not sold to the public
- It ensures prosecution of offenders to the rules and regulation guiding the manufacturing and sale of processed food materials
- It provides enlightenment programmes for food and drug manufacturers .
- It monitors the use of herbal medicine.

ii-NDLEA-(National Drug Law Enforcement Agency) .This is a government agency that is established to prevent the sales and free circulation of hard drug and usage by any individual.

Functions.

- It controls movement of hard drugs in and out of the country
- .-The agency punishes drug barons in accordance to the law
- It organizes orientation and rehabilitation programmes for hard drug users
- It confiscates hard drugs from their importers
- It prohibits the importation and exportation of hard drugs.

Herbal Medicine is an herbal preparation made from the root, leaves, bark of plant, seeds and flowers of some plants to cure various illness especially in Africa and Asia.

List of some herbal medicine in Nigeria

Agbo iba, Herbal tooth paste, Oroki herbal mixture, Yoyo bitter, Dudu osun soap, Ijebu Ode mixture drink etc.

Mis-use of Herbal medicine

i-If the medicine is contaminated with toxic substances

ii-Preservatives are not added the storage of the herbal mixture is not guaranteed.

iii. The herbal products may adulterated

iv. There is no specific or appropriate recommended dosage make the user take more than required dosage.

ASSIGNMENT

1a.Mention two national drug control agencies

b. State two group of people that abuse drug easily

c. Where we obtain herbal medicine

2a.State two misuse of herbal medicine

b. Describe two adverse effects of drug

c. State two functions of (i) NAFDAC (ii) NDLEA

d. Write the full meaning of the above agencies..

WEEK FIVE

ENVIRONMENTAL HAZARD ONE (SOIL EROSION)

Erosion is the washing away or wearing of the top soil and sub-soil from land either by water or wind.

Process of Soil Erosion

-Detachment is when the top soil is actually detached from the rest of the soil.

-Movement is when the top soil is transported to another area.

-Deposition is where the top soil ends or deposited.

CAUSES OF SOIL EROSION

-Overgrazing of the grasses or plants of a particular area(using animals to eat up the plant)

-Bush burning setting bush into fire.)

-Deforestation (cutting down of trees).

-Building and construction work

-Some wrong method of agricultural practices (farming)

-some other human activities such as oil spillage and mining activities.

Ways of Controlling or Preventing Erosion

-Mulching (using plant materials to cover heaps or soil surface)

-Avoid overgrazing.

Avoid bush burning

-By organizing public education awareness.

-Through afforestation programs (tree planting).

-By planting of cover crops which help to cover the soil to the soil from being exposed to the agent of erosion.

-By making terracing and contour across erosion area.

Effects of Soil Erosion.

-It can lead to water pollution.

-It can cause the soil to its fertility

*-It can increase soil acidity which will affect the well
being of the plant.*

WEEK SIX

ENVIRONMENTAL HAZARD TWO FLOODING

Flood is defined as an overflow of water that submerges land which is usually dry. Flooding occurs when a part of the soil or land is submerged under water. Some part of the land are prone to flooding, this is due to the soil structure

Types of Flooding

Flash floods- This occurs within a very short time and it usually as a result of heavy rain.

Rapid On-set Floods-This type of takes longer time to accumulate and the flood can last for a day or two days.

Slow On-set Floods –This is caused by water bodies overflowing their banks, it develops slowly and can last for days and weeks.

Drainage Pattern-This is a system of water course or drains for carrying off excess water. The drainage pattern in a city or town may be blocked by refuse when rain fall and water cannot flow freely in the blocked drainage.

Types of Drainage Pattern

- parallel drainage pattern*
- Rectangular drainage pattern*
- Dendritic drainage pattern*
- Radial drainage pattern*

Causes of Flooding

- Presence of impervious rock deep the soil which will not permit water to pass through them.*
- Heavy downpour of rain*
- Blockage of drainages*
- Overflowing of water from the dam*
- Natural disaster such as tsunami, earthquake and hurricane which cause disturbance to the oceans to cause flood.*
- Flood can occur as a long period of rainlessness as the soil will not absorb the water.*

- The melting of ice when the subsoil is still frozen.*
- Absence of gutters on either side of the roads.*

Prevention of Flood

- Construction of canals or drainages by government or individuals in an area with impervious rock layers surface.*
- Proper drainage of rivers especially where dams are built.*
- Prevention of buildings or construction of roads, houses etc. across canals, drainages and water course.*
- Erection of walls along banks of river, sea and oceans to prevent tidal waves from pushing water up shore.*
- Planting of trees, shrubs and grasses as this will help in breaking the power of moving floods and also reduce erosion.*
- Public should be enlightened about the danger of flood and what should be done to minimize the occurrence.*

Effects of Flood

- It damages houses other valuable properties.*
- It can lead to loss of lives in most cases.*
- It can increase the spread of disease due to contamination to water bodies.*
- It makes soil infertile by removing soil nutrients.*
- It reduces the available land for cultivation.*

ASSIGNMENT

- 1.Release of excess water in dams can cause A.erosion B. flooding C. precipitation
Evaporation*
- 2.Where there no gutters on either side of the road..... may occurs A. precipitation
Drainage Erosion Flooding.*

3. Dumping of refuse, industrial wastes in rivers can cause A. erosion B. flooding C. water movement D. rise in water level

4. Blockage of drainage and gutter can cause A. flooding Erosion Sedimentation Desertification

5. Which of the following predisposes an area to flooding? A. low rainfall B. drought C. low wind High rainfall.

6. is a good example of natural disaster A. fermentation B. Rainfall C. Flooding D. Animal husbandry

7a. List four causes of flooding in your community.

b. State four methods of controlling floods.

WEEK SEVEN AND EIGHT

ENVIRONMENTAL HAZARD TWO (BUSH BURNING)

Bush burning is the act of setting forest, weed and grasses on fire deliberately either with a purpose or not.

Practices That Influence Bush Burning

-Some poor agricultural practices such as shift cultivation

-Hunting for animals

-By using fire to clear land for agricultural purposes

-Construction of roads and felling of trees.

-Grazing purpose by Fulani herdsmen by setting grass ablaze.

Effect of Bush Burning.

-It kills both animals and microorganisms within the enclosed area.

-It may lead to gradual loss of soil fertility

-The burnt ashes may give the soil a slight alkaline content

- It exposes the soil to both wind and rain erosion*
- Some plant species destroyed may not regenerate again on the soil*
- It leads to migration of endangered species of animals*
- The balanced of ecosystem is disturbed*
- It may lead to deforestation*
- The nutrients in the soil may vapourize*
- It contributes to ozone layer*
- it pollutes the air.*

Ways of Controlling or Preventing Bush Burning

- The public should enlightened about the consequences of bush burning*
- Government should provide support that will enable poor farmers' access modern tools and machinery for land clearing*
- The government should also support the movement against bush burning*
- Laws that prohibit bush burning should be made and enforced.*
- Hunting for bush animal should be discouraged.*
- Government should try to meet the need of the people.*

Regulations Against Bush Burning

- Bush fire control officer issuing permit to burn should comply with the direction of the local government.*
- Bush should not be burnt except when permitted by regulated authority.*
- Permission to burn should not be given if local government authority objects.*
- Operations that can lead to bush fire should be avoided.*
- Bush fire brigade and local government should keep register of bush fire and losses caused.*
- Local government may prohibit burning on certain days.*

ASSIGNMENT

1. All these are the causes of erosion except A. Overgrazing B. cutting down of trees C. Making ridges along the slope. Avoid the use of cover crop.

2. All these are methods of preventing erosion except A. fertilizer application Vegetation C. fabric log D. tilling

3. The top layer of soil could be washed away as a result of A. volcanic action B. tree felling C. grass planting. sand deposit.

4. Trees which help to reduce wind erosion are called A. wind vane Wind erosion C. wind support D. wind breaks.

5. Which of the following is an agent of erosion? A. tree B. Grasses Sun D. wind

6. Soil erosion can be prevented by A. felling tree Preventing bush burning Irrigation Crop rotation

7a. State four activities of man which cause erosion

b. List four methods through which soil erosion can be controlled.

WEEK NINE AND TEN

ENVIRONMENTAL HAZARD (DEFORESTATION)

Deforestation is defined as the clearing of forest wood for farming or purposes without immediate replanting. This act of cutting down trees indiscriminately by the activities of man is encouraged by the following factors;

-Bush burning

-Building of schools, houses etc.

-felling of trees for firewood

-Construction of roads and bridges.

Reasons for Deforestation

-Production of timbers for woodworks

- Production of firewood and charcoal for domestic and industrial purposes.*
- Extension or urbanization of towns and cities.*
- Establishment of industries, markets, churches, houses, mosques etc.*
- Construction of roads and bridges.*
- Overgrazing of grasses and small trees by big animals*

Effects of Deforestation on the Environment

- Forests are wind-breaker, when they are destroyed it gives way for wind adverse effect.*
- It enhances soil erosion which destruction to farmland and buildings.*
- When forests are destroyed, it increases the concentration of carbon (iv) oxide in atmosphere which in turn depletes the ozone layer and also cause greenhouse effect.*
- The large concentration of carbon (iv) oxide in the atmosphere causes what is known as" global warming"*
- It exposes the soil intense evaporation of soil water and nutrients.*
- It can lead to extinction of some species of plants*
- It may lead migration and extinction of arboreal animals.*
- It may also lead to loss of forests resources such as resins, barks, fruits, honey, mushroom and medicinal plants.*
- It can lead to scarcity of wood.*
- It may lead to desertification.*

Ways Controlling Deforestation

- By afforestation programme (planting of trees where they have not existed before)*
- By reforestation-This is the process of replanting trees where they were originally present*
- Use of alternative source or heat*

-Establishment of wild-life park and game reserves.

-Adoption of modern methods of cattle rearing.

Government Regulations against Deforestation.

-Restriction of logging and implementation of a compulsory tree planting programme for all loggers.

-Increase charges and conviction against indiscriminate logging.

-Public authorities should impose regulative instruments based on a “command and control” approach

-Government should have forests areas protected by law.

ASSIGNMENT

1. Cutting down of trees and clearing of forests indiscriminately is called A. afforestation B. deforestation C. regulation D. conservation

2. Forests provide life for..... wildlife A. shelter B. poison C. money D. roads

3..... is one of the dangers of deforestation A. good soil B. good road C. increase in population C. Extinction of wildlife

4. A set of rules by the government to control excessive destruction of forestry is known as A. forest reserve B. forest regulation C. forest destruction D. forest activities

5. All of these are regulation of on forestry except A. practising bush burnig B. prohibition of poaching in reserve areas C. enactment of laws against cutting of trees D. establismment of forest game reserve

6a. Define deforestation

b. State four reasons why people cut down trees

c. State three effects of clearing forests to wildlife