

## Final Exam

Name:- Mansora Akter Bithu

ID:- 0112010 010

Serial:- 18

Section - D

Ans to que no ①

DDT is highly insoluble in water but is soluble in most organic solvents.

DDT is highly insoluble in water but is soluble in most organic solvents. This molecule is lipophilic and partitions readily into the fat of all living organisms. Biomagnification and ~~molecule~~ bioaccumulation in the food web make this molecule become more negative impact to the organisms.

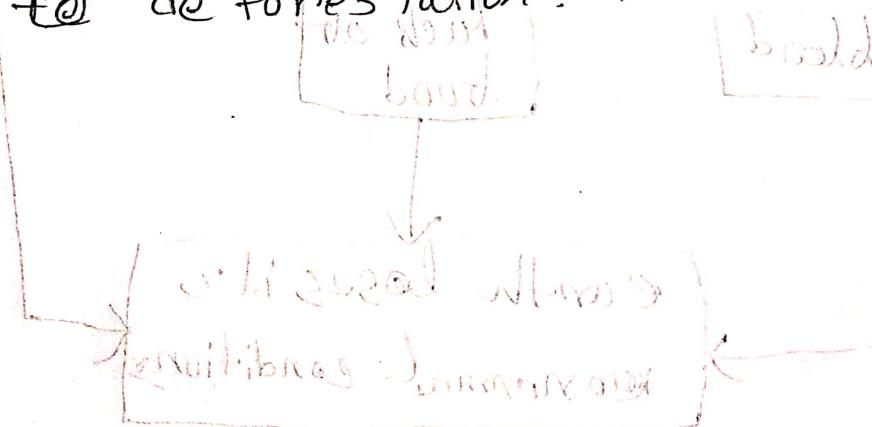
Human health effects from DDT at low environmental doses are unknown. following exposure to high dose, human symptoms can include vomiting, tremors or shakiness or seizures.

Laboratory animal studies showed effects on the liver and reproduction. DDT is considered a possible human carcinogen.

Ans to que no :- 01

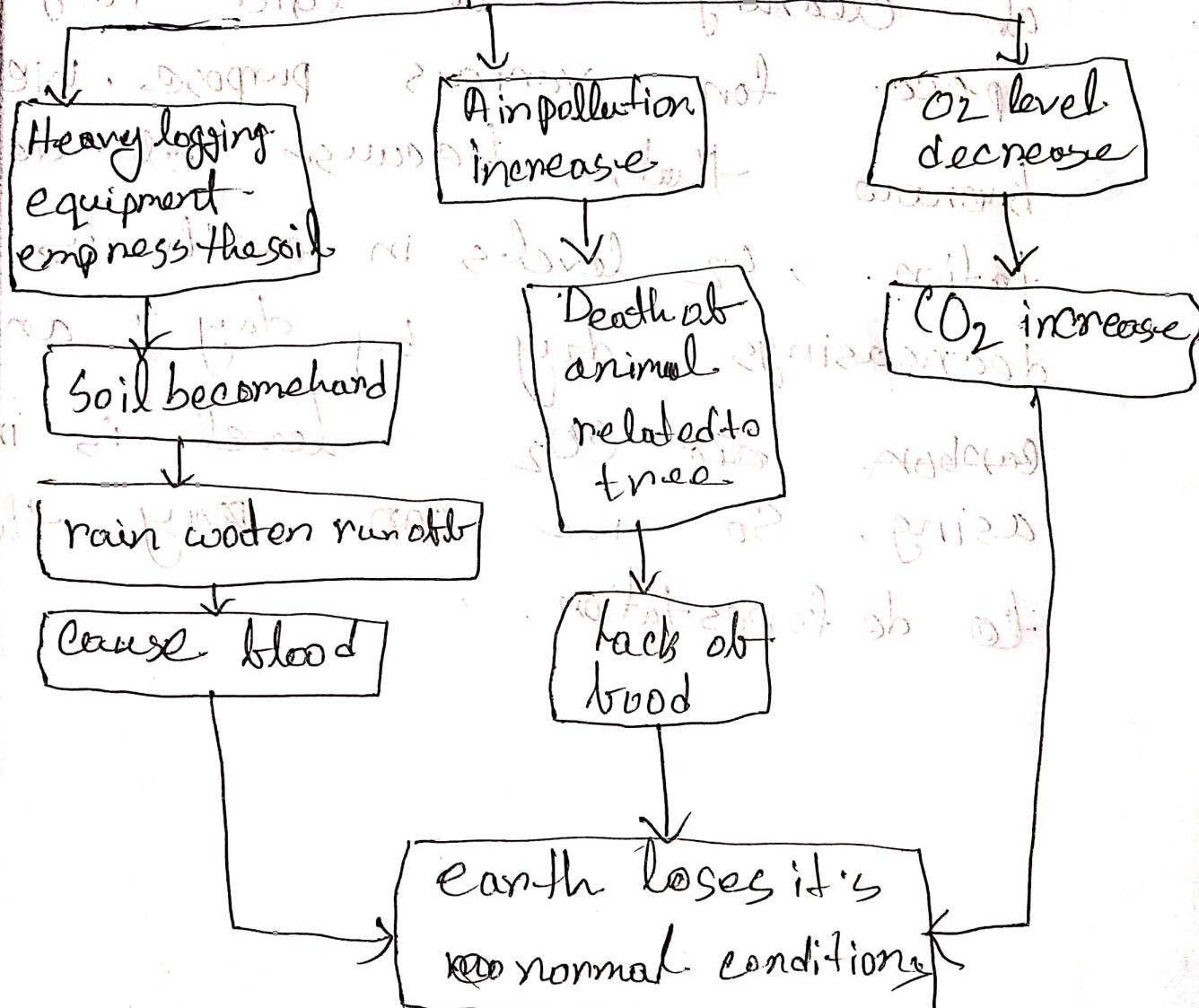
(b)

De-forestation [involves] large scale of clearing us of land to generate space for various purpose, we know flat, because deforestation, O<sub>2</sub> levels in earth is decreasing day by day and carbon CO<sub>2</sub> level is increasing. So we can say that, to de-forestation.





## Deforestation



Ques 1  
Ans to ques no: (Q1)

In a PCR reaction, DNA polymerase synthesizes a new DNA stand complementary to the DNA template by adding nucleotides to the primers. The above components are mixed together in PCR tubes and run on a thermal cycler, where they go through multiple cycles involving the following reaction.

- \* Denature
- \* Anneal primers
- \* Extension

Denaturation: Denaturation is change the natural form of DNA. here If have to separate the DNA stands using high temperature likely  $94^{\circ}\text{C} - 96^{\circ}\text{C}$ . In high temperature two stand will separate,

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\* An real primer: Anneal means join something together. In temperature of  $54^{\circ}\text{C}$  -  $60^{\circ}\text{C}$  the RNA primers to anneal to the separated DNA. but: DNA polymerase enzyme is temperature sensitive so it can not survive here. so, we can use here Taq polymerase which is can survive in high temperature.

\*<sup>Ex</sup>tention:- Here the priming is extended in temperature ~~at 40°C~~<sup>at 4°C</sup> in the 5' to 3' direction, and that will repeat.

that will repeat. It is use full to detect genetic mutations. It's also use A.I. gene therapy.

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Ques no:- 1

Q diagram to show the ingredients.  
have to take on a daily basis.

| in ①  | ②   |
|---|---|
| fats, oils and<br>sweets use sparingly        | + calcium, vitamin D,<br>vitamine. B-12<br>supplements. |
| Milk, Yogurt and<br>cheese group              | Meat, poultry, fish<br>Dry Beans and<br>Nuts            |
| Vegetable's<br>Beans, Tomato,<br>carrots etc. | Fruit's, Bananas,<br>watermilon, grapes,<br>etc         |
| Fortified<br>cereal, Bread.                   | Rice and pasta.   |

Also every day have to have  
drinks lot's of water.

Ans to que no:- (1)

(3)

(e)

Significance of using agarose gel in gel electrophoresis  
Agarose gel is a natural polymer from seaweeds is the most ~~commonly~~ commonly used matrix. It is used below DNA-fragments on the basis of their molecular weight. Smaller fragments migrate faster than larger ones. Smaller fragments also fit through the gel pores easily.

The DNA to be separated is added to the walls of an agarose gel matrix. On current the negatively charged DNA moves to the positive electrode which is ~~a~~ face difficult to move through and travel at different speed based on their size.

Ans to ques no: 2

(a)

Yes, I think it can design and contribute to such projects in the area of molecular diagnosis from computer science engineering.

Molecular diagnosis is a collection of techniques used to analyze biological markers in the genome and proteome. Applying this to medical testing.

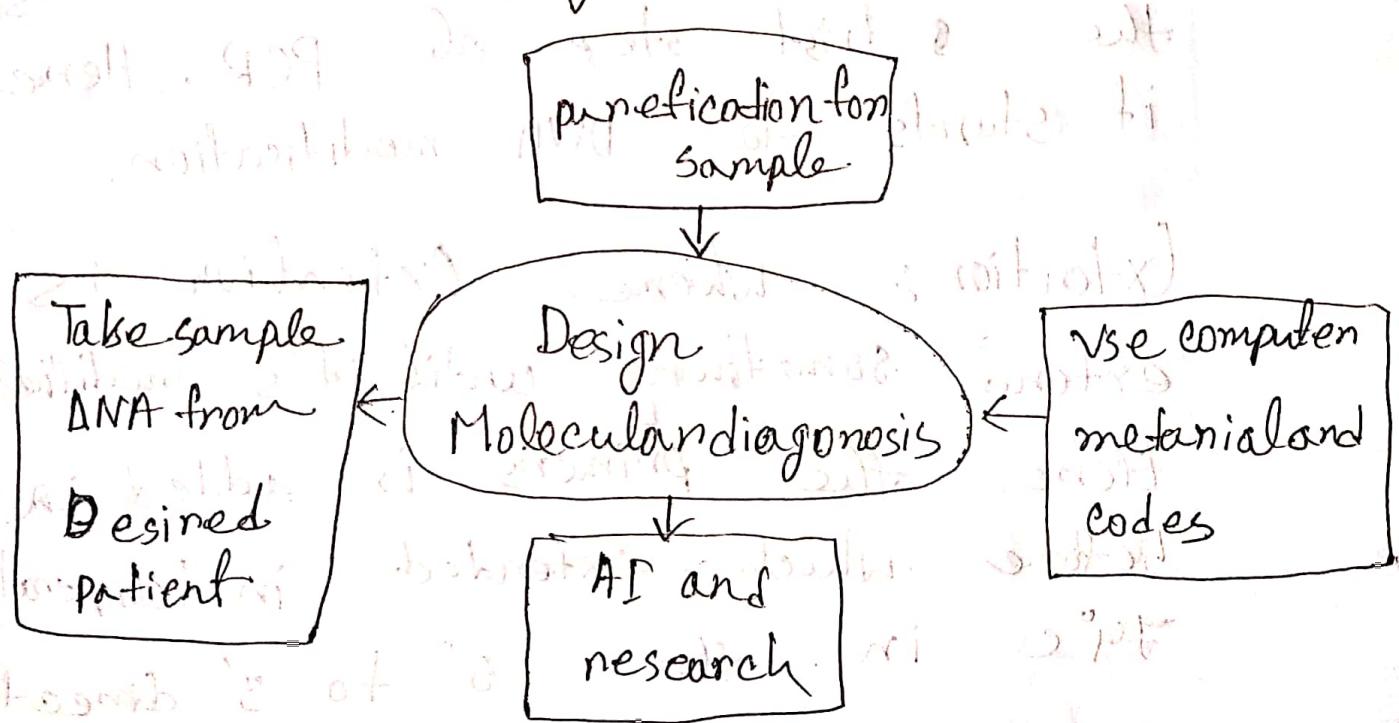
for early diagnosis using technique called PCR. It involves amplification of the nucleic acid in the pathogen allowing us to detect the pathogen at very low concentration. It's use to detect HIV, cancer etc.

In situ Hybridization involves tagging.

DNA to RNA with a radioactive molecule  
Then hybridizes with its complement of  
DNA is a clone of cells.

Computer aided molecular diagnosis  
could benefit from a greater understanding  
of how errors arise and propagate  
in biomolecular modeling.

AI can help computer the combination  
of components that could be better for  
a particular diagnosis.



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Ans to ques no. ②

b) (b) (b)

Here, B<sub>gl</sub>I restriction enzyme that has a recognition sequence

CCCG

Main DNA

ATAA**CCATA** [acc CATTATCAGATTAC

lines. (In) gal

[CCCG TATAAT

ATAA**CCATA** circled [CATTATCAGATTAC] - A|CCCGCACCGTATAAT.

s (cccg) recognised



plasmid

sequence

ATAA**CGATA**[cccc] --- [cccc]TATTA T.

ATAA**CGATA**[cccc] --- [cccc]A & CCTATAT.

ORIONONE

Ans to que no:- ②

ATGATATAGATAGA

ATGATATAGATAGA  
primes

③

G<sub>2</sub>CATAC G<sub>2</sub>CATG<sub>2</sub>C G<sub>2</sub>CATG<sub>2</sub>C

G<sub>2</sub>CATG<sub>2</sub>C

G<sub>2</sub>.

5'

3'

G C A T - G C  
|| || || || || ||  
C G T A C G

G<sub>2</sub>CATG<sub>2</sub>C  
|| || || || || ||  
G<sub>2</sub>T A C G<sub>2</sub>

G<sub>2</sub>CATAC  
|| || || || || ||  
C G T A C G<sub>2</sub>

G<sub>2</sub>CATG<sub>2</sub>C  
|| || || || || ||  
C G T A C G<sub>2</sub>

3'

5'

Ques no:- 03

Ans to ques no:- 03

(a)

3 things we can prevent by developing laws to obtain proper authorisation and by paying compensation benefits.

Bio piracy refers to the use of bioresources by multinational companies and other organisation without proper authorisation from the countries and people concerned without compensatory payment which really impacts on that country products and traditions so as act of protect all resources we can consider some laws to authorisation and proper payment benefits.

~~Q1~~ Ans to ques no. 3

(b)

Ans of Ques 3

Ques 3: Differentiate between Denaturation and Extension.

Ans: Yes, I can differentiate between Denaturation and extension.

Denaturation: Denature is change

the natural form of DNA. Here

it have to separate the DNA

stands, in high temperature like

94°C - 96°C. In high temperature

two stand will separate, and this

is first step of PCR. Here

it stands to DNA modification

Extension: When Extension is

extend something until it's modified.

Here, the primers is added in

before which extended in temperature

74°C in 5' to 3' direction.

in this step often it is repeatable.



PCR is use for different fields.  
Also it's very important in many  
field. In medicine, it is useful to  
detect genetic mutation and to  
detect HIV, in clinical sample etc.

Ans to this no:- (3)

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Ans to this no:- (3)

Here, age = 68

Weight = 80 kg.

height = 180 cm.

so,  $\text{height} = 1.8 \text{ m.}$

$$\text{BMI} = \frac{80}{(1.8)^2}$$
$$= 24.60 \text{ kgm}^{-2}$$

The BMI range of my relative  
is normal. But as he is  
getting old and have 1 type  
diabetes so he should careful.  
about his health. The blood sugar  
can be high as result he.

can face complication such as kidney, nerve and cardiovascular diseases.

Glycemic index and glycemic load are scientific terms used to measure impact of a food on blood sugar.

But in a type 1 diabetes patient can control their problem by food.

Food to avoid:-

① brown rice

② olive oil

③ whole wheat

④ fruits

⑤ beans and lentils

## Food to avoid

- ① sodas (soft diet & and regular)
- ② Simple carbohydrates - refined sugars (white bread, pastries, chips etc)
- ③ trans fats (anything with hydrogenated oil on the label) and high fat animal products.

Ans to que no:- (U)

Ans: Yes I, think a pandemic can outbreaks from environment.

Pandemic can cause huge impact on our environment. Because if we introduce different kind of element in our ecosystem it might cause huge impact to ecosystem some external components like Mercury, Na, Pb etc. can joined in the ecosystem and can hamper the balance of ecosystem and the environment so, As a result the ecosystem resistance increase and many disease can spread into the ecosystem create pandemic situation. This diseases can spread out in between

us and we might get attracted by any problem. Because we take produce and consumes both as a food.

If we think about ~~a~~ the pandemic cholera where outbreaks which ~~are~~ killed so many people big infected with this deadly disease. This tiny virus spread by food, sweat, tears, mucus, saliva, diarrhea, urine, water. People Throw away this thing in environment and if this thing started to spread by water by drinking and having food.

As we know equilibrium is the steady state of an ecosystem where all organisms are in balance with their environment and with each other. Any small changes to the system will be balanced by negative feedback.

Q ((2008) 98 x 8.3) -

## Ans to the Ques 04

Yes, i think there is a relation between these two things. What we eat doesn't just affect our physical health, it also can affect our mental health and well-being. Eating well which means having a balanced diet full of vegetables and nutrients can improve your sense of well-being and your mood.



Nutrient and imbalances.

→ self medication

We should have to maintain a healthy balanced diet by eating good and healthy food. Sugar limitation should be reduced. Maintenance of regular exercise. After all we will be have to have a good mood with good health. Now we can start our day with a good breakfast.

Breakfast → Fitness book.

Health & fitness  
Chronic Disease

Dot list → Fitness book

Health checklist → book fitting

Ans to no :- 102

(c)

Resistance - the ability of the ecosystem to continue to function without change when stressed by disturbance.

Resilience - the ability of the ecosystem to recover from disturbance.

Ecological resilience is the ability of an ecosystem to respond to some kind of disturbance - a measure of how quickly the system recovers. These disturbances can be natural - floods, storms, fire etc. or they can be human - caused climate change, deforestation, agriculture, and overfishing.

Environmental resistance factors: things that limit the growth of population. This includes biotic factors like predators, disease, competition and lack of food as well as abiotic factors like fire, flood, and drought. Often cause a slow wind down.

Abiotic factors can include temperature, light, water, soil, and more. In the desert, it's very hot and dry, so plants have to adapt to survive. Some plants have thick, fleshy leaves to store water, while others have small, sharp leaves to reduce water loss. Some plants are annuals, which means they grow, flower, and die in a single year, while others are perennials, which live for many years. Some plants are flowering plants, while others are non-flowering plants like ferns and mosses.

