

MID TERM EXAM

01/20/2022

Date: 23 Aug, 2021

Azizul Islam

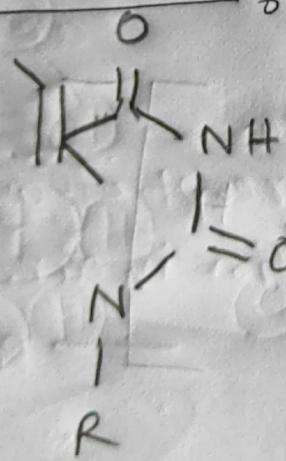
Section: C

(01)

8He

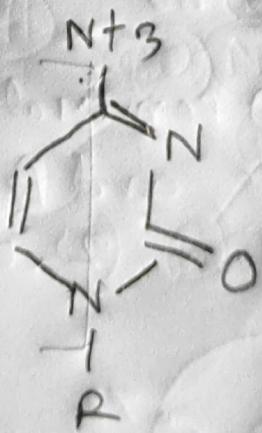
- Q1
- ① The genetic code is a set of three-letter combination of nucleotides called codons, each of which corresponds to a specific amino acid or stop signal.

Pyrimidines:

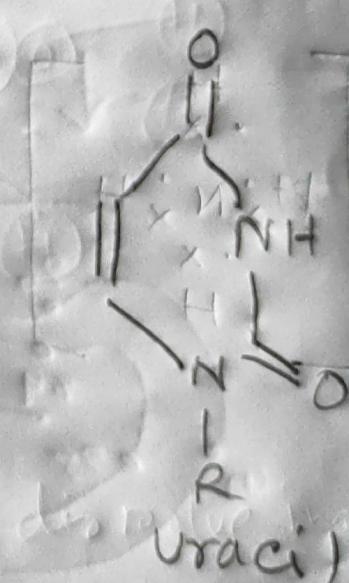


Thymine

HOPHN



Cytosine



Uracil

Combinations: CAU, CGU, etc.

(c) Lewis diagram;

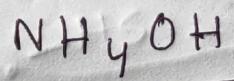
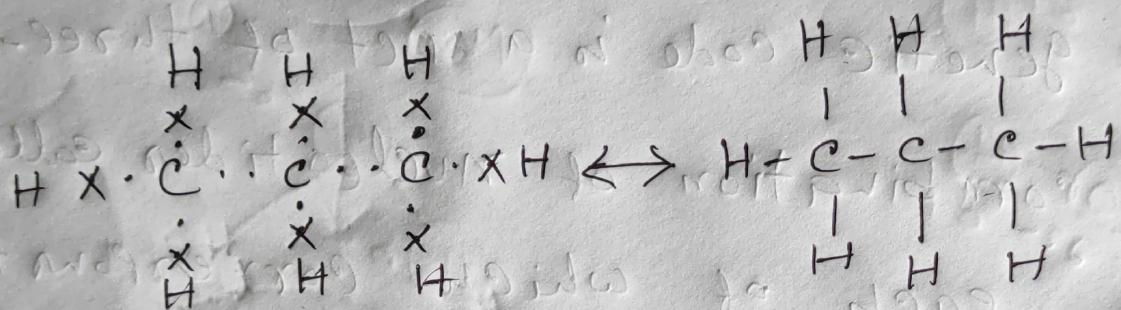
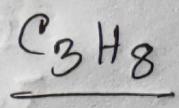
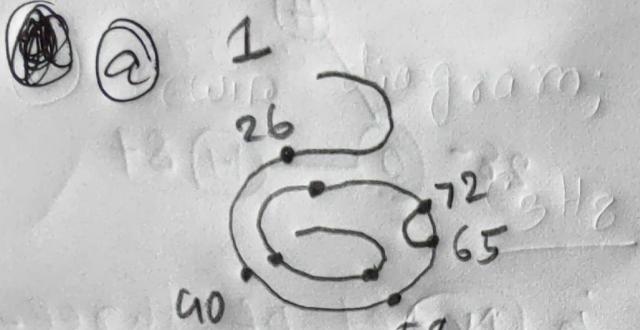
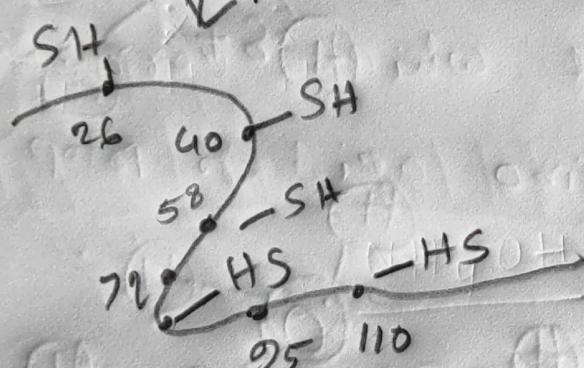


Fig: deprotonation



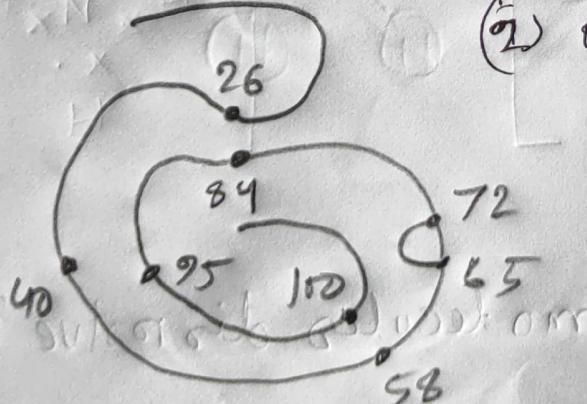
Enzyme with native conformation and full enzyme activity.



Reduced and denatured enzyme with loss of activity.

- ↓
- (1) Removal of urea and β -mercaptoethanol.
 - (2) Oxidation in air.

→ Renaturation.

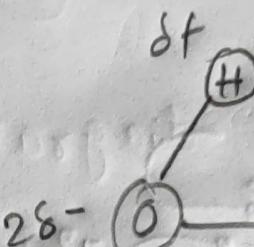
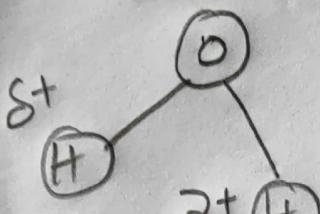


↓ Return to native conformation

Fig: denaturation and full activity

(b)

$2S^-$



$2S^- \quad \delta^+ \quad \delta^- \quad H \quad \delta^+$

Na^+

The genetic code is read by ribosomes, which consist of a large ribosomal subunit and a small ribosomal subunit. The small ribosomal subunit binds to mRNA at a site called the P site, and the large ribosomal subunit binds to mRNA at a site called the A site. The P site is where amino acids are added to the growing polypeptide chain, and the A site is where tRNA molecules bring amino acids to the P site.

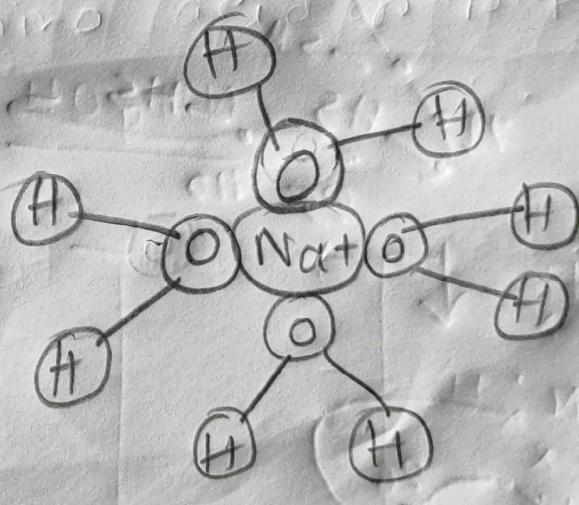
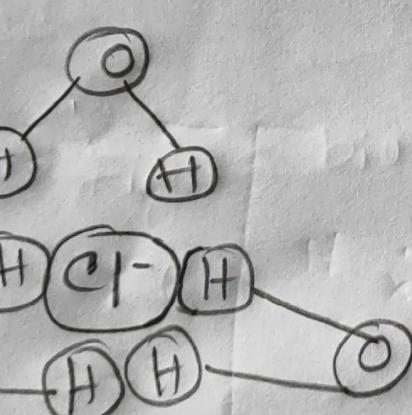
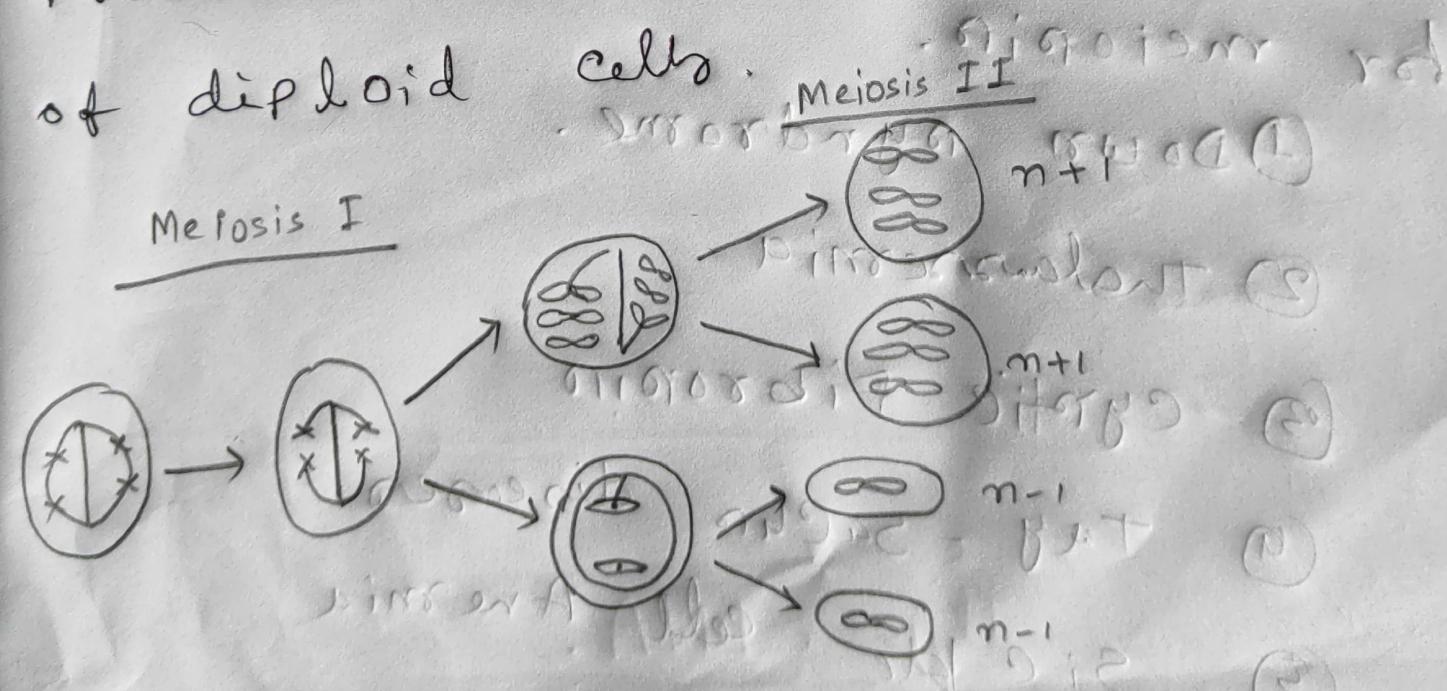


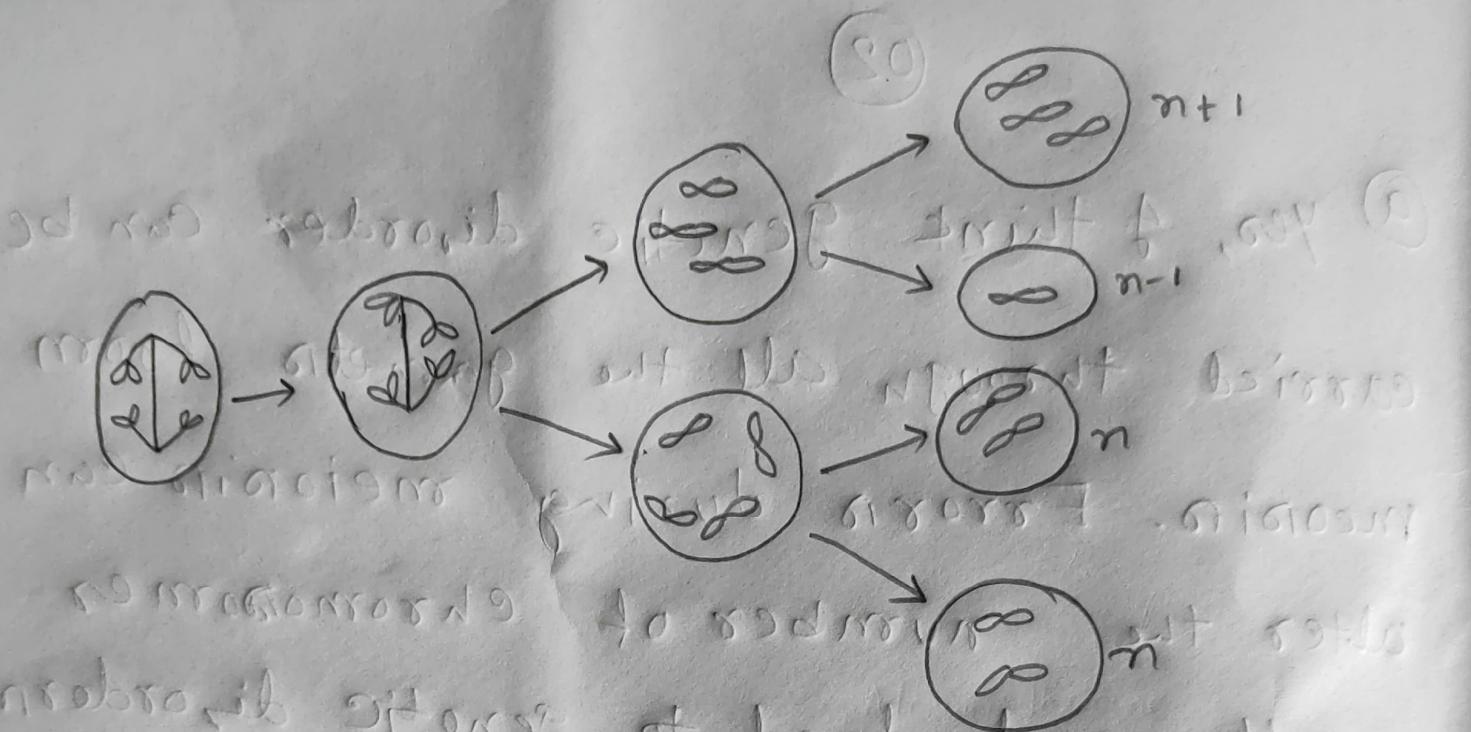
Fig: Showing molecules dissolve inside water solution: CO_2 , Na^+ , Cl^- , $C_6H_{12}O_6$.

(02)

Q) Yes, I think genetic disorder can be carried through all the gametes from meiosis. Errors during meiosis can alter the number of chromosomes in cells and lead to genetic disorders. Gametes are made via a meiosis which produces cells with $n=25$ instead of diploid cells.



Ans: The different stages and sub-stages of meiosis work together to ensure that the genetic material is correctly distributed to the daughter cells. P.T.O.



There are several diseases that is known as genetic disorder are happening for meiosis.

① Down syndrome.

② Thalassemia.

③ Cystic Fibrosis

④ Tay - sachs disease

⑤ Sickle cell Anemia

So, if we can say yes in that case, genetic disorder are carried through all the gametes from meiosis.

②

b) Machine vision makes it possible
for robot to perform tasks like weed
picking, growth monitoring, harvesting,
sorting, and packing. Yes, I think biorobot
can be used in farming.



Fig. biorobot with large hand.

Q2

Q2

b

c

From the structure, Both are

2 Polysaccharides. one is Amylose

and another one is Amylopectin.

We can differ them in that way,

Amylose is formed in a glucose

from in several units in a linear

manner. and Amylopectin is also from

of a glucose but it arranged in

branched. We can give a similarity

of them, they both are carbohydrate,

and they are polymers of glucose.

and they both have a hydroxyl

group. So, in this way we can mention

them.

(d)
62

(e)
63

(f)

Dark brown, out out Light brown

3) Sadpara out out out out out out out

DD

dd

D

d

Dd

F₁

F₂:

Dd

Dd

DD

dD

dd

Dd

Dark, Dark

light

Dark

Dark : light = 3 : 1 = 75% : 25%

Result to a next generation, the percentage
will be 75% to be dark brown eyes.

-180-

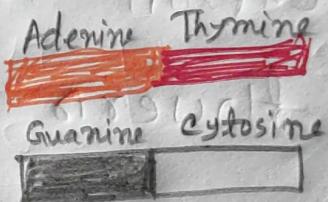
(4)

(no)

@

d

3 Adenine Thymine Guanine Cytosine



It is a DNA.

My body structure resembles with my grandfather because they inherit a similar genetic makeup as that of their their grandparents. This has to do with the law of Dominance. Generations are hereditary that is, they are passed from one generation to the next generation. and each generation it becomes individual is a product of his or her composition. The gene is a piece of DNA that codes for protein and is different for each person. Such modern permutations provide variety, however if the individual inherits the same genes as his grandfather, he or she will be identical to him.

(04)

(1)

b) Down syndrome and Turner's syndrome

are example of Aneuploidy. Ploidy is common in plants and plant growers may exploit this fact to produce plants with flowers having double petals.

Aneuploidy is a chromosomal mutation in which there is one or more extra chromosomes. On the other hand Polyploidy is also related with the chromosome. It is a chromosomal mutation in which a cell has entire extra set of chromosomes. Polyploidy is generally lethal in animals. Aneuploidy is the presence of an abnormal number of chromosomes in a cell.