CHAPTER: – 2 (Live Process in living organisms' Part 1)

Exercise: –

1.) Fill in the blanks and explain the statements.

a.) After complete oxidation of a glucose molecules, —-38 — — number of ATP molecules are formed. (As to do work we need energy and this energy is produced in mitochondria through the cellular respiration the glucose molecules in the present of oxygen produce 38 ATP molecules.)

b.) At the end of glycolysis, —ATP, pyruvic acid, – -NADH2, water — — molecules are obtained.

(Glucose + Pi + 2ADP + NAD+ à 2 pyruvate + 2 ATP + 2NADH + 2H++ 2H2O)

c.) Genetic recombination occurs in –pachytene — — phase of prophase of meiosis-I. (When two chromosome or in two different region of a chromosome genetic material transfer which is known as genetic recombination.)

d.) All chromosomes are arranged parallel to equatorial plane of cell in – metaphase — — phase of mitosis.(In this phase nuclear membrane disappear, chromosome is completely visible from sister chromatids as there are complete condensation, arrange parallel to equatorial plane of cell.)

e.) For formation of plasma membrane, — -phospholipid — — molecules are necessary.(Protein molecules structure in phospholipid is in intrinsically or extrinsically.)

f.) Our muscle cells perform — anaerobic– — type of respiration during exercise. (In exercise we intake limited amount of muscles cell.)

2) Write definitions.

a.) Nutrition. b. Nutrients c. Proteins. d. Cellular respiration e. Aerobic respiration. f. Glycolysis.

Ans: – a) Nutrition: – We take nutrients to do work in which process is known as nutrition.

b) Nutrients: – In the nutrition process by taking the substance we get energy and the substance which we took is known as nutrients. Example: – carbohydrates, fats, protein etc.

c)Proteins: – Protein is the main source for our body structure. In protein there are one or two more amino acids chain are present. One gram of protein provides 4 calories energy.

d) Cellular respiration: – Different substance like carbohydrates, fats, protein breaks and produces the energy in which process in cell is known as cellular respiration.

e) Aerobic respiration: – In the presence of oxygen the carbohydrates molecules break down and produce energy is called aerobic respiration.

f) Glycolysis: – In absent of oxygen the six carbon of glucose breaks down to three carbon of pyruvate molecules formed by which process is known as glycolysis.

3.) Distinguish between

a.) Glycolysis and TCA cycle.

b.) Mitosis and meiosis.

c.) Aerobic and anaerobic respiration.

Ans: – a)

Glycolysis	TCA cycle
Cyclic process.	Linear process.
ATP doesn't consume.	2 ATP molecules consumed.
In eukaryotes cell it seen.	Each cell follows.

b)

Mitosis	Meiosis
Single division of cell.	Two successive division.
No of chromosome remain same.	Chromosome become half.
In somatic cell it seen.	In reproductive cell it seen.

c)

Aerobic respiration	Anaerobic respiration
Glucose partially breaks.	Glucose completely breaks.
2 ATP molecules from.	36 ATP molecules produce.

4.) Give scientific reasons.

a.) Oxygen is necessary for complete oxidation of glucose.

Ans: – Glucose completely breaks down in the present of oxygen, this process goes down three different step like glycolysis, kerbs cycle and electron transparent chain reaction.

b.) Fibbers are one of the important nutrients.

Ans:- The complete digestion doesn't happen without the fibbers. The fibbers itself completely digest but help the food to digest completely.

c.) Cell division is one of the important properties of cells and organisms.

Ans: – Because of cell division a cell become mature. The unicellular substance becomes multicellular. The zygote is formed. Organism evaluate by cell division.

d.) Sometimes, higher plants and animals too perform anaerobic respiration.

Ans: – In some difficult condition like when we exercise the oxygen intake become decrease so it performs anaerobic respiration. In plant cell when water logged it shows anaerobic respiration.

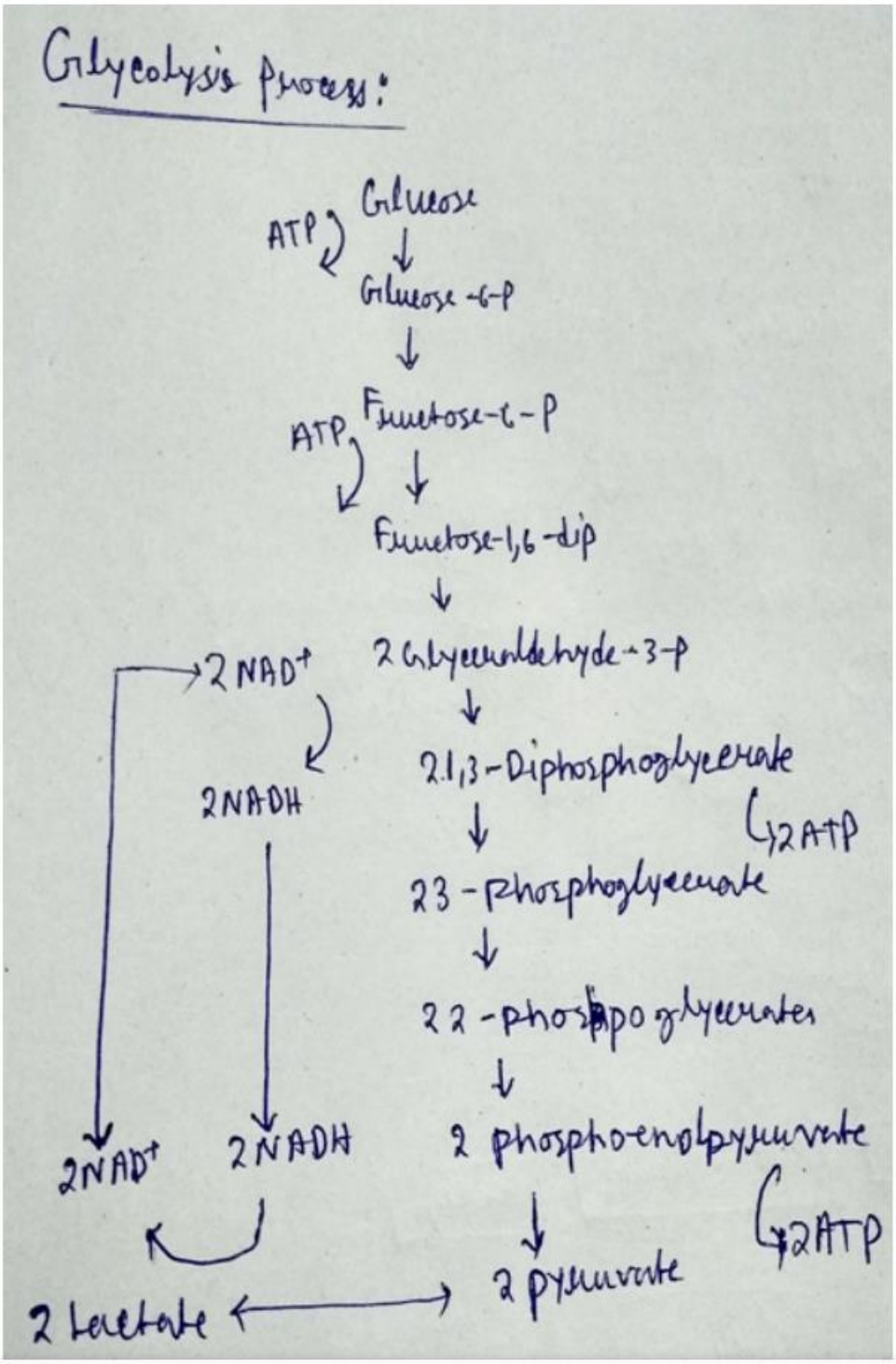
e.) Krebs cycleis also known as citric acid cycle.

Ans: – In kerbs cycle the first product citric acid regenerated at last. The acetyl coA obtained when pyruvate decarboxylation reacts with oxoactitic acid and produce citric acid. In cellular respiration this process happened.

5.) Answer in detail.

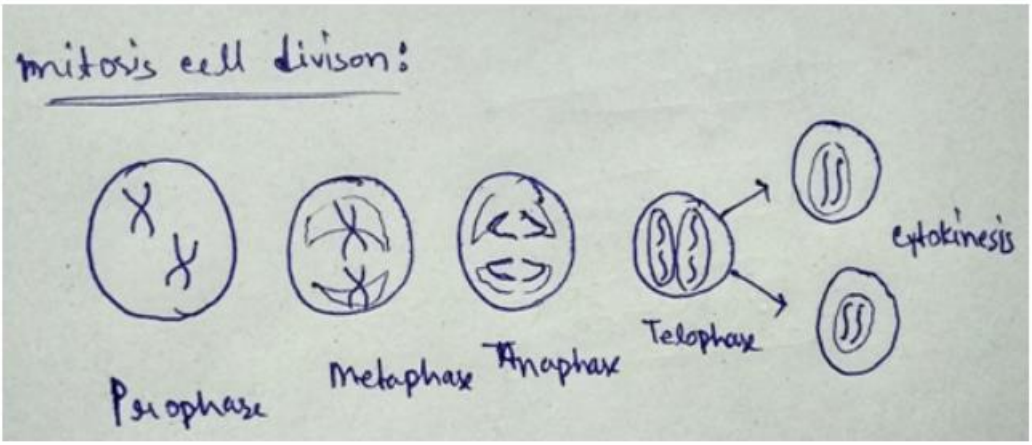
a.) Explain the glycolysis in detail.

Ans: – This process occurs in cytoplasm. This process is also known as EMP path. In glycolysis process glucose become pyruvic acid by different way.



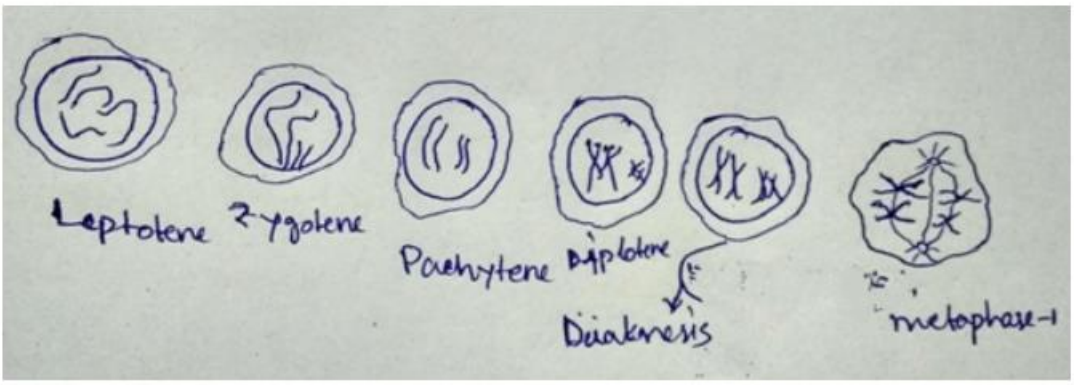
b.) With the help of suitable diagrams, explain the mitosis in detail.

Ans: – Through the mitosis process the single chromosome become two nuclei by the different phase which are prophase, metaphase, telophase and anaphase.



c.) With the help of suitable diagrams, explain the five stages of prophase-I of meiosis.

Ans: – Inprophase 1 of meiosis the condenses chromosome form from complex DNA and protein.

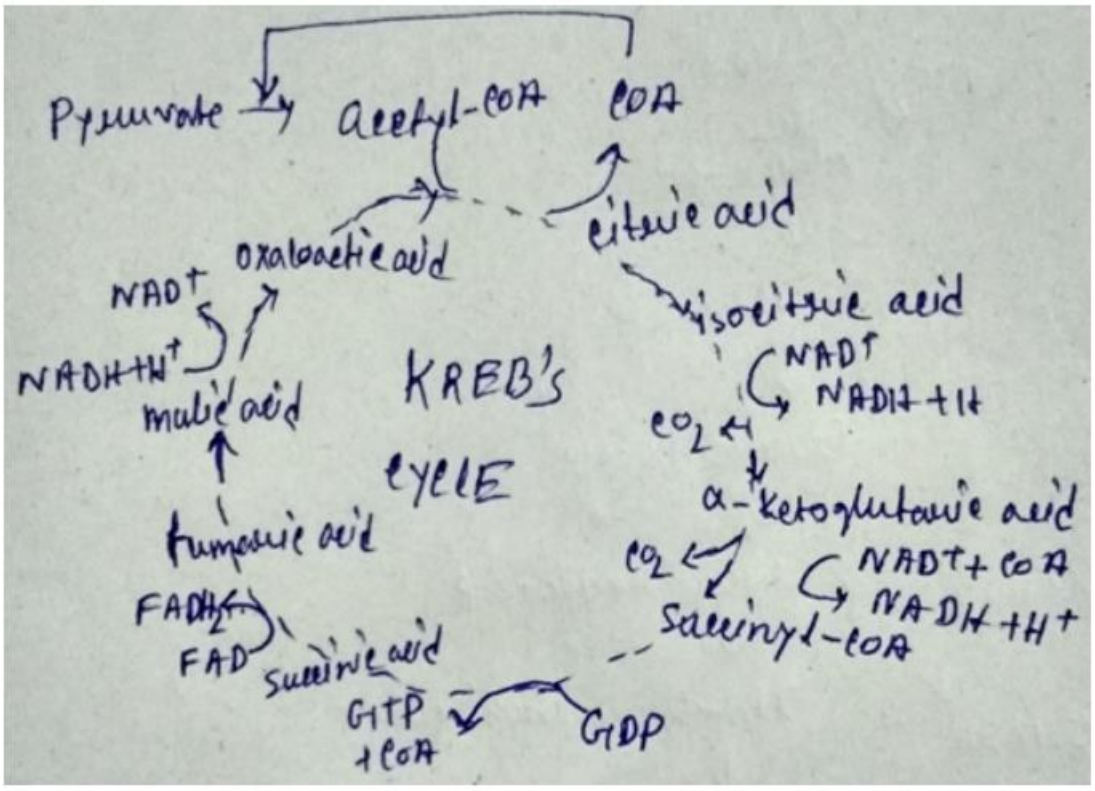


d.) How all the life processes contribute to the growth and development of the body?

Ans: – Nutrition ,transportation, metabolism, respiration, excretion. , reproduction these various process are happening throughout our life in different way. Nutrition is essential for surviving as well as the different process. By respiration we get energy and oxygen. Reproduction is the process to maintain balance in nature. By excretion the indigestible food gets out from body. So different time our body show's different work for our body.

e.) Explain the Krebs cycle with reaction.

Ans: – The kerbs cycle is also TCA cycle. In this process the pyruvic acid become CO2 in mitochondria and water. In this process acetyl COA derived from the fats, carbohydrates, protein oxidation.



6.) How energy is formed from oxidation of carbohydrates, fats and proteins? Correct the diagram given below.

Ans: – The oxidation of carbohydrates, fats, and protein are the main source of energy for our body. Glucose which is the convert to pyruvic acid through Krebs cycle produce energy.

Protein or amino acid convert to acetyl COA through Krebs cycle. The oxidation of electron transfer in long chain reaction of NADH2 produce. The fatty acid converts to acetyl co enzyme and then NADH2 and produce energy.