NEET- 2020- 45 Days Crash Course

Date : 17th August 2020

Chapter Name : Respiration in Plants

QUIZ

5. The complete combustion of Glucose produces….

1) CO_2

2) O_2

3) H_2O

4) 1 & 3 ✓

Aerobic Respiration produces $CO_2 + H_2O +$ E

6. During EMP pathway reduction of NAD^+ to $NADH + H^+$ takes place by the activity of…

1) G-3-P dehydrogenase → NAD^+ accepts H_2

2) Triose phosphate isomerase

3) Phosphoglyceromutase

4) Pyruvic kinase

MCQs

1. Energy is required to carry out all daily life activities like.....

1) Reproduction

2) Absorption

3) Transport

4) 1, 2 & 3 ✓

All 3

7. The Key product of Glycolysis…..

1) Pyruvic acid

2) G-6-P

3) PGAL

4) DHAP

In glycolysis 1 Glu → 2 Pyruvic Acid

9. What is incorrect about glycolysis?

I) Oxygen utilized in the beginning F

II) CO_2 liberated at the end F

III) 2 ATP net gain T

IV) No decarboxylation T

1) III & IV

2) I & II ✓

3) II & III

4) II & IV

In Glycolysis no O_2 utilized & no decarboxylation

2. Living organisms which can't prepare their own food.....

1) Animals – Heterotrophic

2) Cyanobacteria – autotrophic

3) Saprophytes – heterotrophic

4) 1 & 3 ✓

3. Organisms which can prepare their own food.....

1) Saprophytes

2) Animals

3) Cyanobacteria ✓ → autotrophic has pigments so can perform photosynthesis

4) Fungi

4. What is the source of food, that is respired for life processes?

1) Nitrogen metabolism

2) Reproduction

3) Absorption

4) Photosynthesis – produces glucose that is utilized for photosynthesis

5. **What is the mechanism, which is involved in breaking of food materials within the cell to release energy and the same energy is used to synthesize ATP?**

1) **Cellular respiration** → Food substances broken down → ATP

2) **Nitrogen metabolism** ATP utilized

3) **Reproduction** ATP utilized

4) **Photosynthesis** → ATP is utilized

6. Identify the substrates which undergo oxidation during the process of respiration….

1) Fats, Proteins

2) Carbohydrates

3) Organic acids

4) 1, 2 & 3 ✓

→ All can be respiratory substrates

7. Identify the substance which is produced during respiration is used as precursor for biosynthesis of other molecules of cell……

1) ATP

2) Glucose

3) Carbon skeleton ✓

4) Fructose

C containing compounds like Succinic acid, fumaric acid Malic acid → used in synthesis other substances

8. Interconnected network of airspaces in root, stem and leaves of plant body is because of…..

1) The loosely arranged Parenchyma

2) The closely arranged Parenchyma

3) Stomata

4) Lenticels

Spongy parenchyma

9. The complete combustion of Glucose produces.....

1) CO_2

2) O_2

3) H_2O

4) 1 & 3

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10. The purpose of oxidation of glucose in several small steps, instead of one step is.....

1) ATP synthesis — ATP is released in steps of Glycolysis, oxidative Decarboxylation, Kreb's cycle

2) Release of energy as heat

3) Synthesis of CO_2

4) Release of H_2O

11. Identify the process of respiration, which occurs commonly in all living organisms without involvement of oxygen.....

1) Glycolysis → anaerobic, common pathway

2) Krebs cycle

3) Fermentation

4) Oxidative decarboxylation

12. Glycolysis process is known with other name with respect to the……

1) Meyeroff

2) Embden

3) Parnas

4) 1, 2, 3 ✓

} EMP pathway

13. Identify the process, which is involved in partial oxidation of glucose in all living organisms……

1) **Glycolysis** → common to aerobic & anaerobic pathways

2) **Oxidative decarboxylation**

3) **Fermentation**

4) **Kreb's cycle**

14. What is the main source of glucose present in plants?

1) Sucrose

2) Fructose

3) Stored carbohydrates

4) 1 & 3

Plants produce glucose
∴ store starch
∴ mobilize sucrose

15. Identify the enzyme, which is involved in activation of Sucrose….

1) Proteases

2) Hexokinase

3) Invertase ✓

4) Carboxylase

Sucrose $\xrightarrow{\text{Invertase}}$ Glucose + Fructose

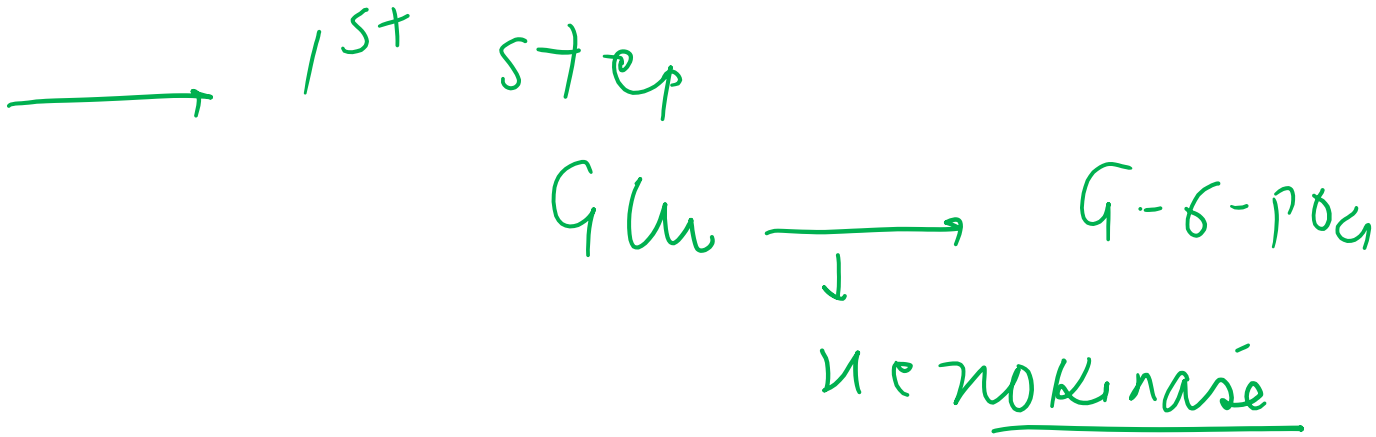
16. Which of the following organic catalyst is involved in initiation of EMP pathway?

1) Enolase

2) Hexokinase ✓

3) Aldolase

4) Pyruvic kinase



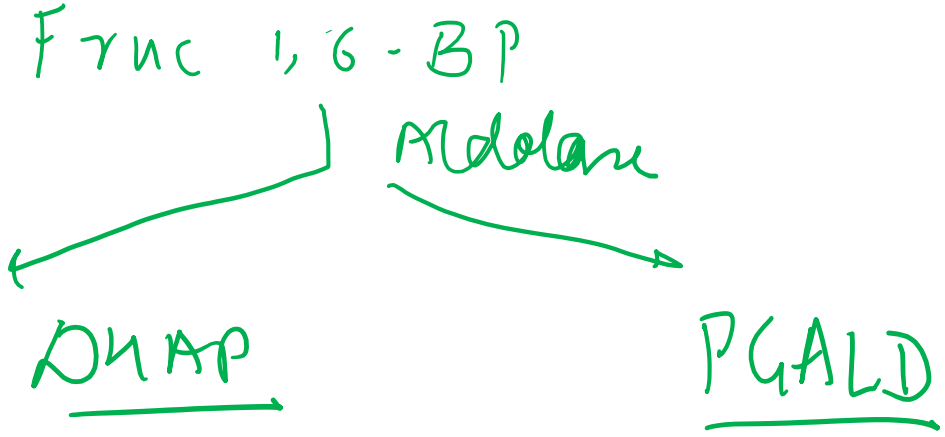
17. Enzymatic activity of Aldolase on Fructose 1, 6 Bis – phosphate, produces….

1) Dihydroxy acetone phosphate

2) Glyceraldehyde – 3 - phosphate

3) Pyruvic acid

4) 1 & 2 ✓



18. Energy yielding processes in glycolysis are.....

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1) Formation of PGA

2) Formation of DHAP

3) Formation of Pyruvic acid

4) 1 & 3 ✓

PEP → PA

ADP + P → ATP

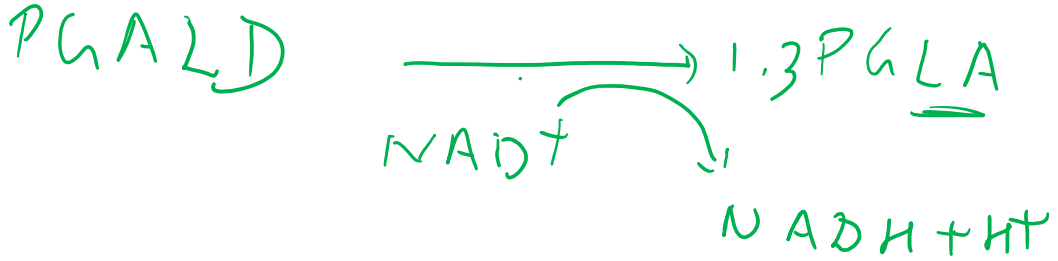
19. During the EMP pathway reduction of NAD^+ to NADH + H^+ takes place by the activity of……

1) G – 3 – P dehydrogenase

2) Triose phosphate isomerase

3) Phosphoglyceromutase

4) Pyruvic kinase



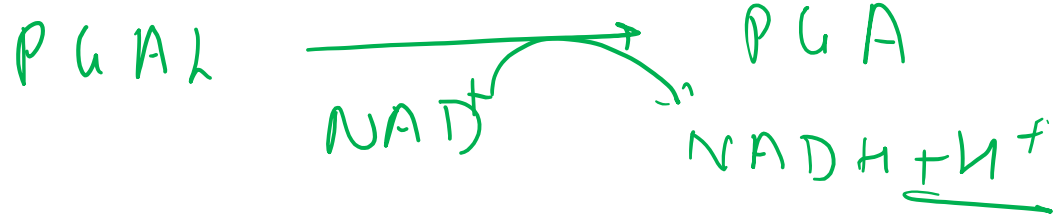
20. During first oxidation of aerobic respiration, two redox equivalents are removed from PGAL are in the form of…….

1) Two Hydrogen atoms

2) Two Carbon atoms

3) Two Sulphur atoms

4) Two Nitrogen atoms



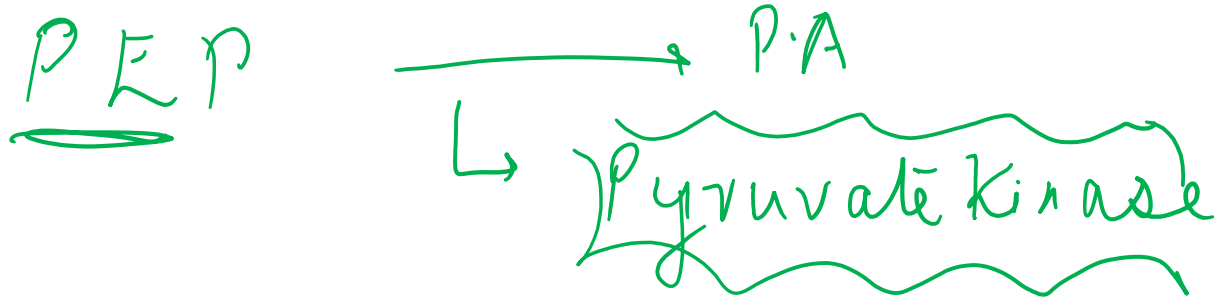
21. Organic catalyst involved in reducing activation energy, during the conversion of phosophoenol pyruvate to pyruvic acid…..

1) **Pyruvic kinase**

2) **Hexokinase**

3) **Phospho fructokinase**

4) **Glycerokinase**



22. The key product of Glycolysis is…..

1) Pyruvic acid

2) Glucose – 6 - phosphate

3) PGAL

4) DHAP

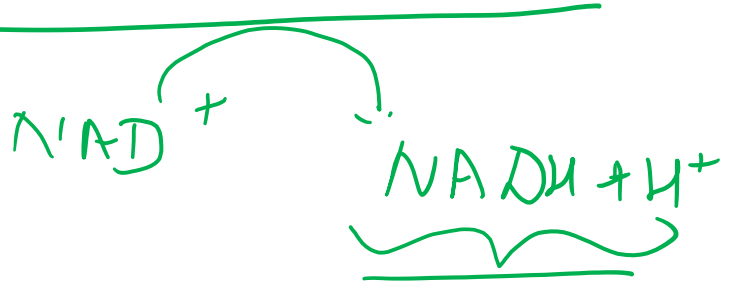
23. Reducing power $NADH+H^+$ is produced during following conversion reaction of Glycolysis.....

1) 3 Phosphoglyceric acid to 2 phosphoglyceric acid

2) 2 Phosphoglycerate to Phosphoglycerate

3) Phosphoenol pyruvate to Pyruvate

4) Glyceraldehyde 3 phosphate to 1,3 bis phosphoglyceric acid



24. Products formed by utilization of the energy (ATP) during Glycolysis are.....

1) Glucose-6-phosphate — ATP req

2) Fructose-1, 6 Bisphosphate — ATP req

3) Phosphoenol pyruvate

4) 1 & 2 ✓

25. The process of oxidation which takes place under anaerobic conditions in many Prokaryotes and unicellular Eukaryotes….

1) Krebs cycle

2) Citric acid cycle

3) Fermentation ✓ → eg Bact, Yeast

4) Glycolysis

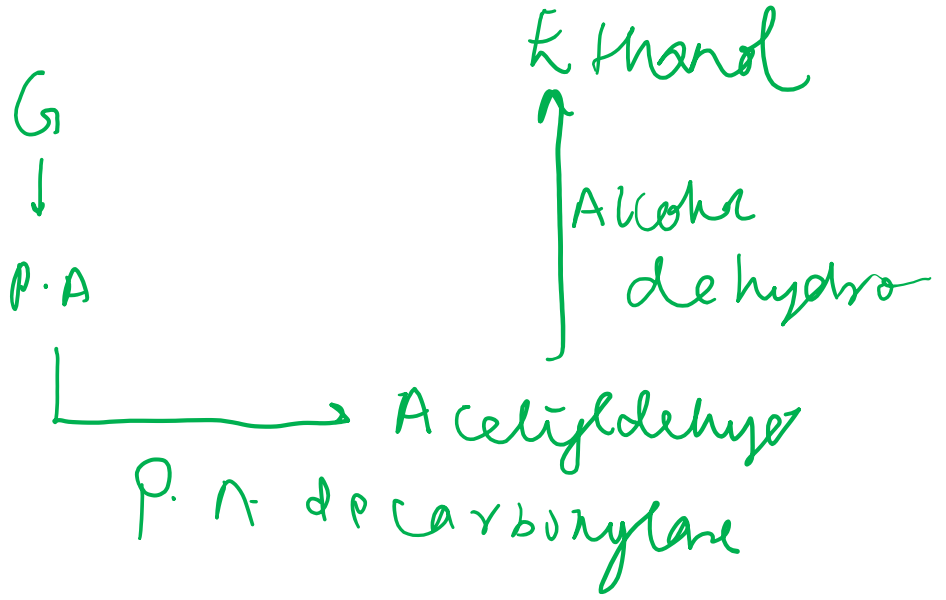
26. In Yeast cells, Pyruvic acid is converted into CO_2 and Ethanol by the activity of…..

1) Alcohol dehydrogenase

2) Pyruvic decarboxylase

3) Aldolase

4) 1 & 2



27. When Oxygen is inadequate for cellular respiration in muscles, Pyruvic acid is reduced to Lactic acid by…..

C3 C3

1) Alcohol dehydrogenase

2) Lactate dehydrogenases ✓

3) G – 3 – P dehydrogenase

4) Pyruvic dehydrogenase

G
↓
P.A ⟶ Lactic acid
↓
Lactate dehydrogenase

28. The percentage of energy released during Lactic acid and Alcohol fermentation, present in glucose is…….

1) less than 7%

2) less than 5%

3) more than 7%

4) more than 10%

29. Yeasts poison themselves to death, when the concentration of Alcohol reaches….

1) 13% NEET **

2) 10%

3) 5%

4) 7%

30. The process that leads to complete oxidation of organic substances in the presence of Oxygen……

1) Anaerobic respiration

2) Fermentation

3) Aerobic respiration ✓

4) 1 & 3

31. Pyruvate, of Glycolysis for undergoing complete oxidation has to be transported from the Cytoplasm to…..

1) Mitochondria

2) Chloroplast

3) Lysosomes

4) Ribosomes

32. The intermediate process which occurs between Glycolysis and TCA cycle is.....

1) Citric acid cycle

2) Krebs cycle

3) Oxidative decarboxylation

4) Electron transport system

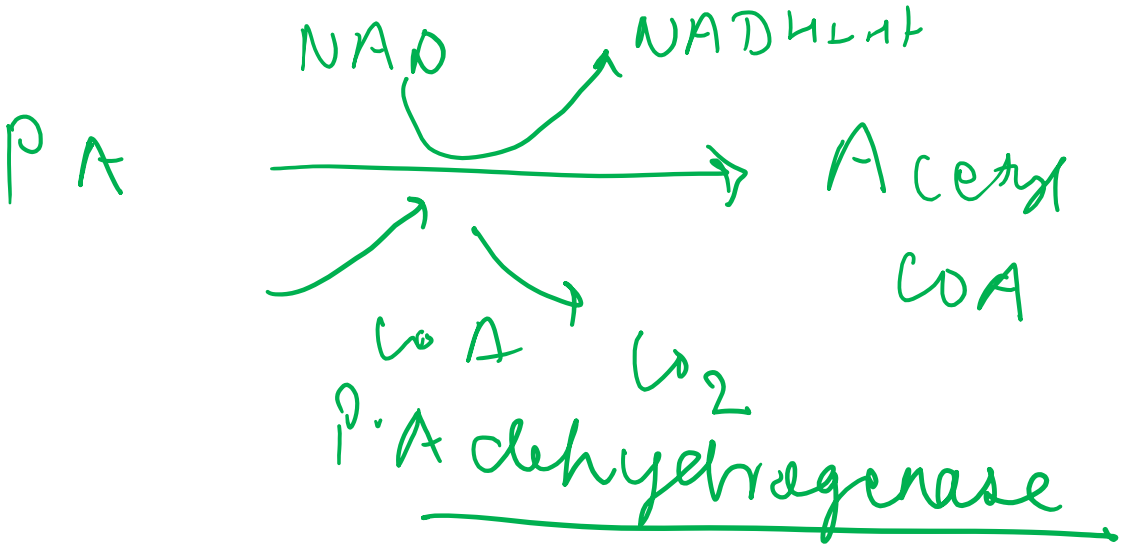
33. The Enzyme involved in bringing down the activation energy for formation of Acetyl co-A from Pyruvic acid is….

1) Pyruvic decarboxylase

2) Oxalosuccinic decarboxylase

3) Pyruvic dehydrogenase

4) Malic dehydrogenase



34. Oxidative decarboxylation occurs in.....

1) Mitochondrial matrix

2) Mitochondrial membrane

3) Perimitochondrial membrane

4) Cytosol of cell

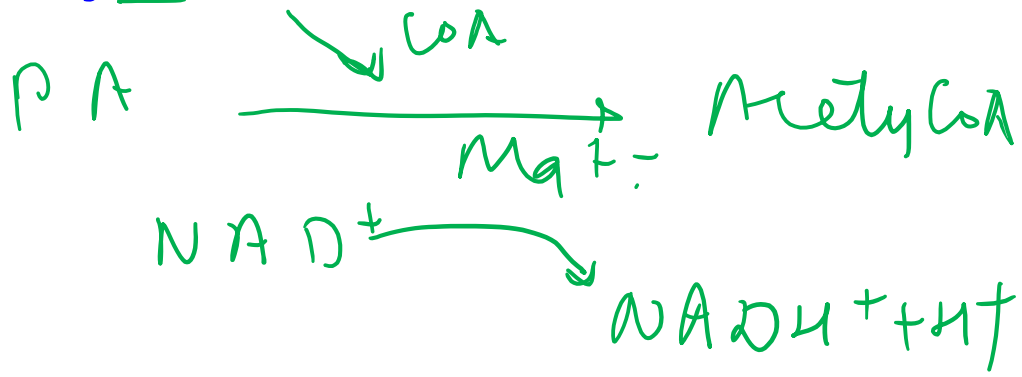
35. Co-factors associated with the activation of pyruvic dehydrogenase enzyme during oxidative decarboxylation.....

1) Mg^{2+}

2) Co-enzyme A

3) NAD^{+}

4) 1, 2 & 3



36. Tricarboxylic acid cycle, more commonly known after the scientist.....

1) Hans Krebs

2) Meyerhoff

3) Embden

4) Parnas

37. The reducing agent for Lactic acid and Ethanol formation/ conversion from Pyruvic acid is…..

1) $FADH + H^+$

2) $NADH + H^+$ ✓

3) ATP

4) 1 & 2

38. Initial six carbon compound formed by condensation, of 2c and 4c compound during TCA cycle is…..

1) Citric acid – 1st stable compound in TCA cycle

2) Malic acid

3) Oxaloacetic acid

4) Fumaric acid

Citric acid → α Ketoglutaric acid

39. First Decarboxylation product of TCA cycle.....

1) Succinyl Co.A 4C

2) α- Ketoglutaric acid ✓ −5C

3) Acetyl Co.A — 2C

4) Malic acid — 4C

40. Substrate required to regenerate for continuous oxidation of Acetyl co-A Via TCA cycle is……

OAA + acetyl CoA ⟶ Citric acid

1) **Oxaloacetic acid** ✓

2) **α - Ketogluartic acid**

3) **Pyruvic acid**

4) **Citric acid**

41. Removal of Hydrogen and CO_2 from a substrate is called.....

1) Decarboxylation

2) Reduction

3) Reductive decarboxylation

4) Oxidative decarboxylation

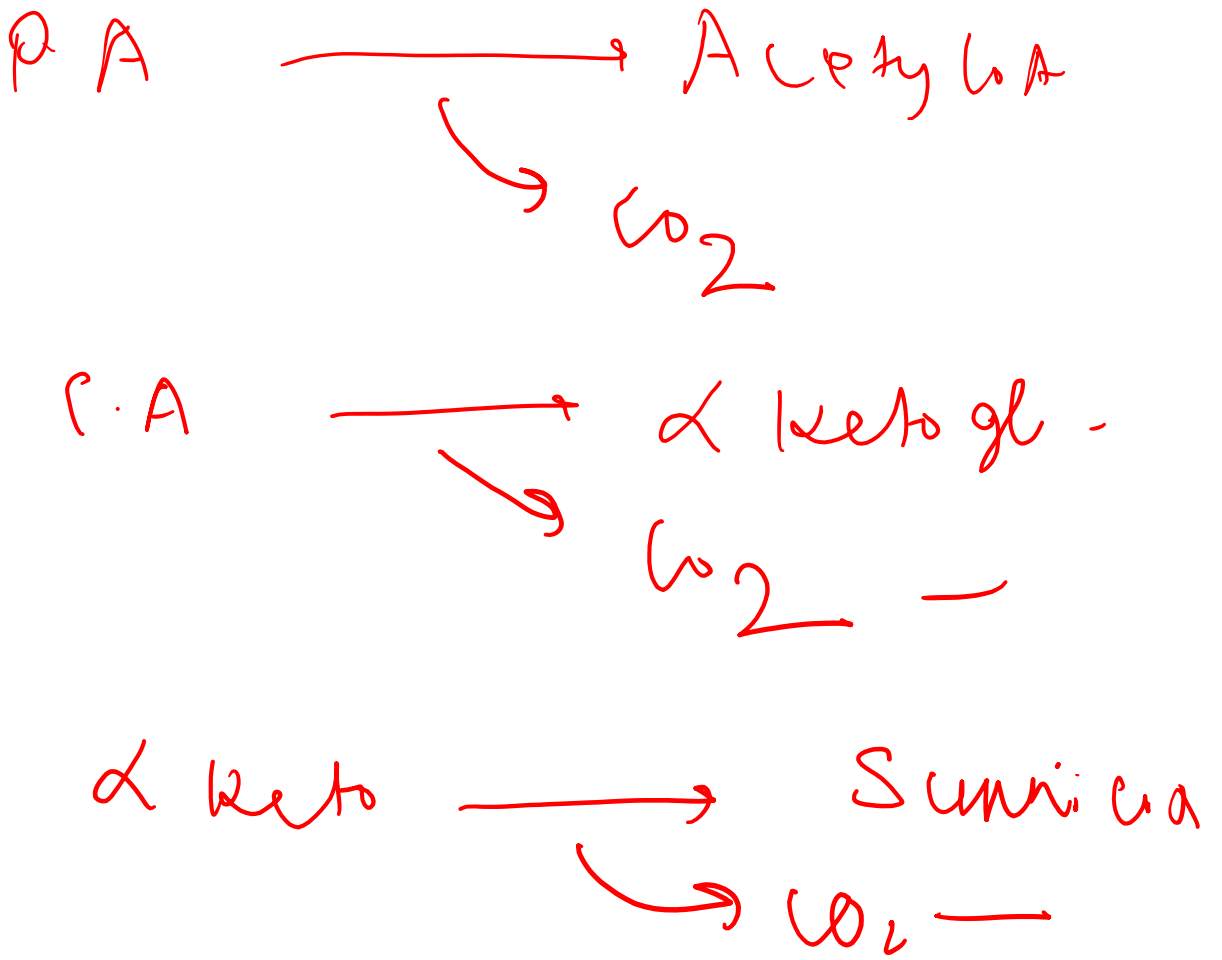
42. In how many steps CO_2 is released during aerobic respiration?

1) Six

2) Four

3) Three ✓

4) One



43. In TCA cycle GTP is formed during the conversion of…..

1) Fumaric acid to Malic acid

2) Citrate to Isocitrate

3) Succinyl Co-A to Succinic acid

4) Malic acid to Oxaloacetic acid

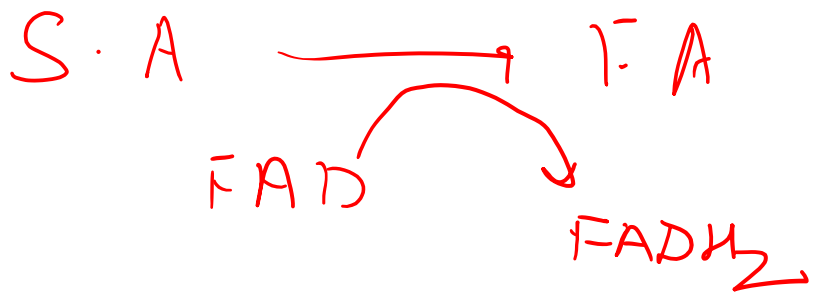
44. In Kreb's cycle FAD^+ is reduced to $FADH_2$, during the conversion of….

1) Fumaric acid to Malic acid

2) Succinic acid to Fumaric acid

3) Citric acid to cis – aconitic acid

4) Isocitric acid to Oxalosuccinic acid



45. Site of Krebs cycle in Mitochondria is.....

1) Outer membrane

2) F^0- F^1 Particles

3) Mitochondrial matrix

4) Inner membrane

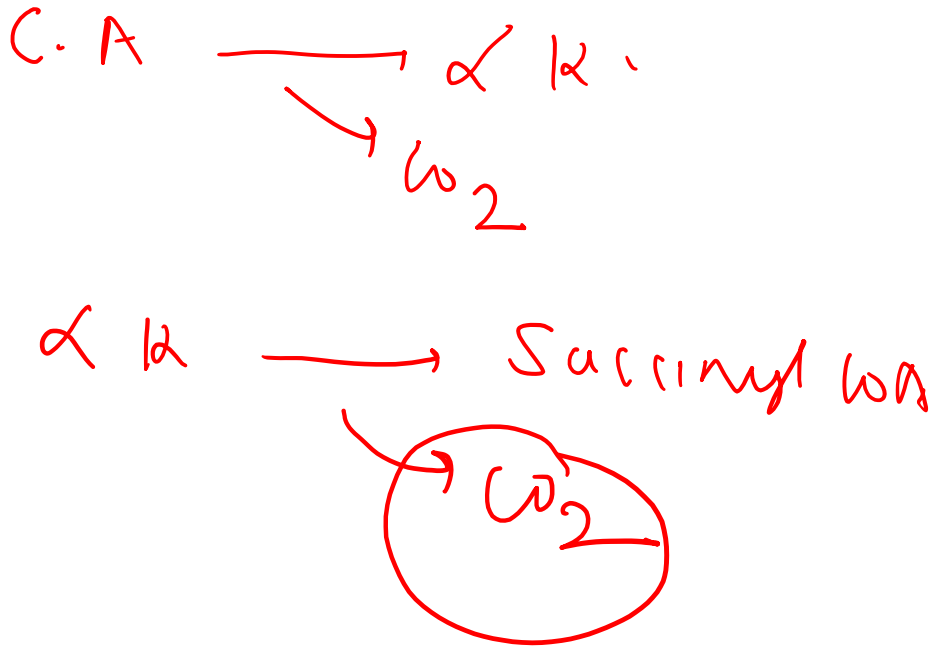
46. The product formed as a result of second Oxidative decarboxylation during aerobic respiration is…..

1) Acetyl Co-A

2) Pyruvic acid

3) α - Ketogluaric acid

4) Succinyl Co . A



47. The correct sequence of acids in the Citric acid cycle is……..

1) Iso - citric acid → Cis – aconitic acid → Succinic acid

2) Succinic acid → Fumaric acid → Malic acid

3) Citric acid → Malic acid → Iso citric acid

4) OAA → Isocitric acid → Citric acid

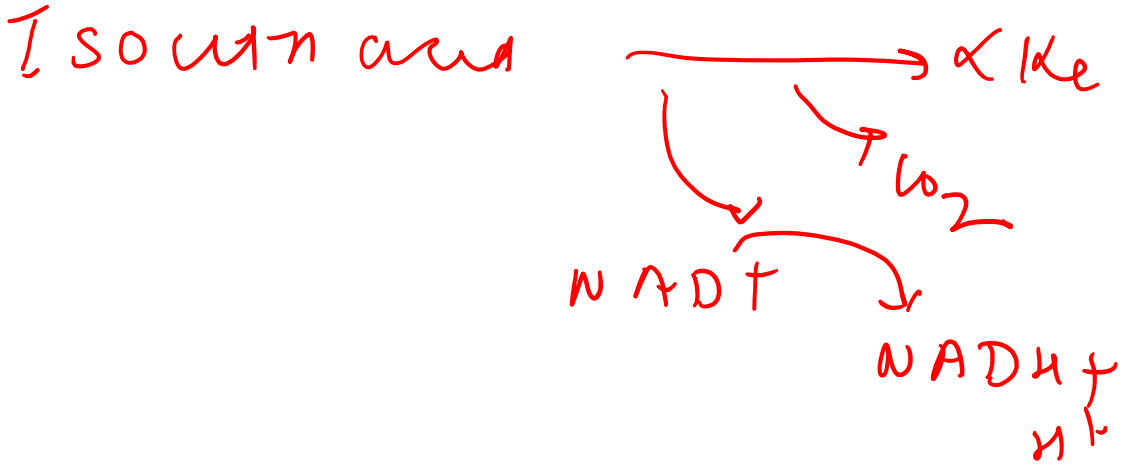
48. In TCA cycle, first reduction of NAD^+ to NADH is carried out by….

1) Succinic dehydrogenase

2) Malic dehydrogenase

3) Isocitric dehydrogenase ✓

4) α - Ketoglutaric dehydrogenase



49. Product of Oxidation III in Kreb's cycle is……

1) **Fumaric acid**

2) **Oxaloacetic acid**

3) **Succiniyl Co.A**

4) **Oxalosuccinic acid**

2 oxidative decarb —

4 oxidation

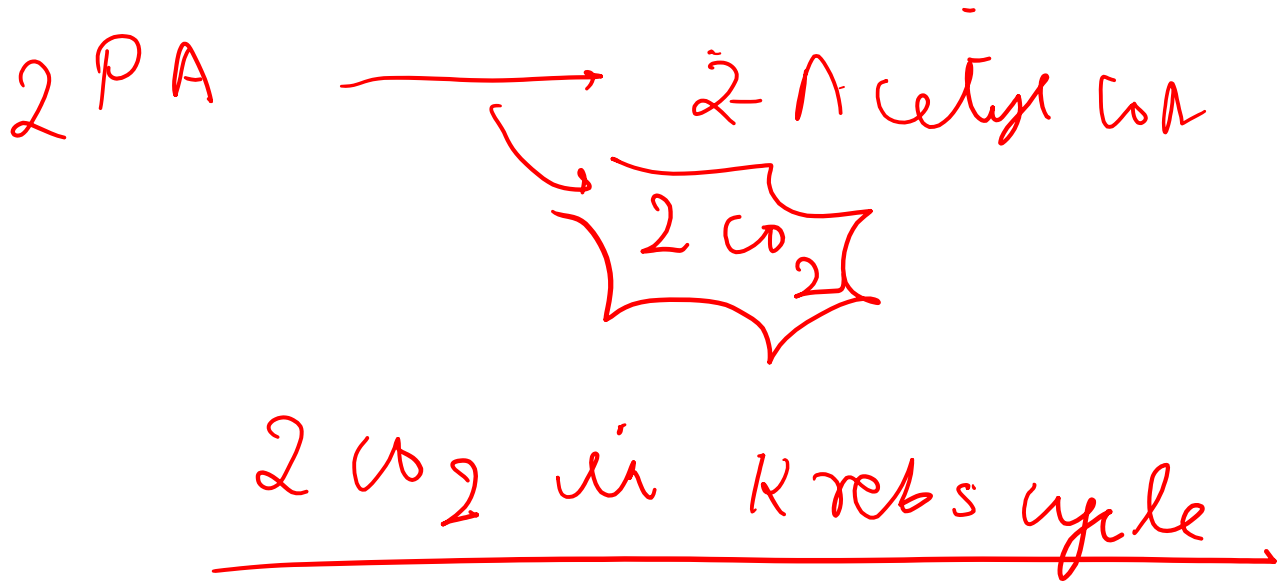
50. Total no .of CO_2 molecules released during Kreb's cycle from one glucose…..

1) Four

2) Two

3) Six

4) One



51. During which stage of TCA cycle, Substrate level phosphorylation occurs…..

1) Condensation of OAA with Acetyl Co-A

2) Cleavage of Succinyl Co-A to Succinic acid

3) Furmaric acid to Malic acid

4) Conversion of Malic acid to OAA

52. Which of the following is finally synthesized during Substrate level phosphorylation?

1) NADH

2) GTP

3) ATP

4) FADH

53. Identify the enzyme, which is involved in oxidation, decarboxylation and condensation of a substrate during TCA cycle…..

1) Succinic dehydrogenase

2) α - Ketoglutaric dehydrogenase

3) Isocitric dehydrogenase

4) Malic dehydrogenase

54. Substrate for last oxidation in TCA cycle is.....

1) Malic acid

2) Succinic acid

3) Fumaric acid

4) Isocitric acid

55. Total no .of NADH + H^+ and $FADH_2$ synthesized in Krebs cycle from one glucose….

1) Six and Six

2) Eight and Two

3) Six and Two ✓

4) Three and One

56. Which of the following enzyme is not involved in reduction of NAD^+ to NADH + H^+?

1) Succinic dehydrogenase

2) Isocitric dehydrogenase

3) α - Ketoglutaric dehydrogenase

4) Malic dehydrogenase

57. In TCA cycle hydration of substrates is carried out by.....

1) Succinic thiokinase

2) Aconitase

3) Fumerase

4) 2 & 3

58. Four carbon compound which is required for production of $FADH_2$ & NADH respectively is synthesized by oxidation of the substrate….

1) Succinic acid

2) Malic acid

3) OAA

4) α - Ketoglutaric acid

59. Total no .of ATP synthesized by SLP in TCA cycle from one glucose….

1) Two

2) One

3) Four

4) Three