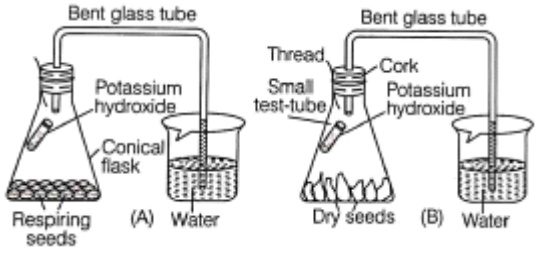
NEET - C14 - CELLULAR RESPIRATION

1. **The given diagram shows aerobic respiration in seeds. Choose the incorrect statement for the experiment result.**



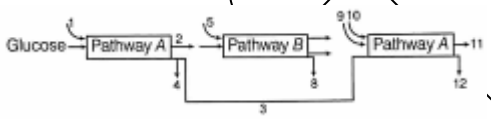
A. Germinating seeds can respire aerobically

B. The burning splinter gets extinguished when taken into the flask

C. Carbon dioxides is absorbed by potassium hydroxide

D. Oxygen is not required for aerobic respiration of seed

2. **The three boxes in this diagram represent the three major biosynthetic pathways in aerobic respiration. Arrows represent net reactants or products.**



Arrow numbered 4, 8 and 12 can all be

A. NADH B. ATP

C. H_2O D. FAD^+ or $FADH_2$

3. **Which one of the following reactions is an example of oxidative decarboxylation?**

A. Conversion of succinate to fumarate B. Conversion of furnarate of malate

C. Conversion of pyruvate to acetyl Co-A D. Conversion of citrate to isocitrate

4. **Choose the sequence of participation of four respiratory enzymes are given as follow:**

I. Enolase II. Aconitase

III. Fumarase IV. Malic dehydrogenase

A. II, IV, III and I B. IV, I, II and III

C. I, II, III and IV D. IV, I, III and II

5. **Read the following statements and choose the comet option. Statement I NADP is electron carrier, but FAD is only hydrogen carrier.**

S.THIYAGARAJAN. M.SC., M.PHIL., B.Ed.,
PH: 9944664846
Magalingapurum, Pollachi.

Statement II NADP and FAD both are electron carrier.

A. Statement I is correct II is incorrect

B. Both statement I and II are correct

C. Both statement I and II are incorrect

D. Statement I is incorrect and II is correct

6. **Following are the statement regarding Krebs' cycle. Choose the correct option form the following:**

I. Two acetyl residues liberate two ATP or GTP molecules through substrate level phosphorylation.

II. The net gain of energy is equal to 8 ATP.

III. Use oxygen as terminal oxidant.

A. I and II B. II and III

C. I and III D. I, II and III

7. **Krebs' cycle takes place in**

A. cytoplasm B. chloroplast

C. nucleus D. mitochondria

8. **The final stages of respiration in which energy of oxidation derives the synthesis of ATP, involves which of the following.**

A. Krebs' cycle and fermentation B. Glycolysis and Krebs' cycle

C. ETC and oxidative phosphorylation D. ETC and Krebs' cycle

9. **In each of the following question a statement of Assertion is given followed by the corresponding statement of Reason. Of the statements, mark the correct answer as**

Assertion: In ETC there is gain of energy at each step.

Reason At each step of ETC. there are hydrogen carrier.

A. Both Assertion and Reason are true and Reason is the correct explanation of Assertion.

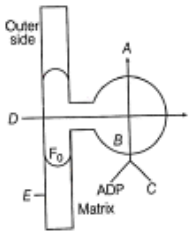
B. Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. Assertion is true, but Reason is false

D. Both Assertion and Reason are false

S.THIYAGARAJAN. M.SC., M.PHIL., B.Ed.,
PH: 9944664846
Magalingapurum, Pollachi.

10. The diagram given below shows the representation of ATP synthesis in mitochondria. Fill in the blanks with appropriate options.



A. A-ATP, B-F_1, C-Pi, D-$2H^+$ E-Inner mitochondrial membrane

B. A-ATP, B-Inner mitochondrial membrane, C-F1, D-Pi, E-$2H^+$

C. A-F_1, B-ATP, C-Pi, D-Inner mitochondrial membrane E-$2H^+$

D. A-Pi, B-F_1, C-Inner mitochondrial membrane, D-ATP, E-$2H^+$

11. Identify from the group of microorganism which is an obligate anaerobe.

A. Cyanobacteria B. Clostridium botulinum

C. Clostridium tetani D. Bacillus subtilis

12. The Respiratory Quotient (RQ) of some of the compounds are 4, 1 and 0.7. These given below. Choose the correct option.

I. Malic acid, palmitic acid and tripalmitin.

II. Oxalic acid, carbohydrate and tripalmitin.

III. Tripalmitin, malic acid and carbohydrate

IV. Organic acid, carbohydrate, fat.

V. Oxalic acid, carbohydrate and malic acid.

A. I, II and III B. II and IV

C. III, IV and V D. II and III

13. Read the following statements regarding fermentation and choose the correct options.

I. In fermentation incomplete oxidation of glucose is achieved under anaerobic condition.

II. The enzyme pyruvic acid dehydrogenase and alcohol oxidases catalysis these reaction.

III. Pyruvic acid is converted into CO_2 and citric acid.

IV. Pyruvic acid is reduced to acetic acid in muscles.

A. I and II B. II and IV

C. III and IV D. I and III

S.THIYAGARAJAN. M.SC., M.PHIL., B.Ed.,
PH: 9944664846
Magalingapurum, Pollachi.

14. Which of the metabolites is common to respiration mediated breakdown of fat, carbohydrates and proteins?

A. Glucose-6-phosphate B. Fructose 1, 6-bisphosphate

C. Pyruvic acid D. Acetyl Co-A

15. Following are the statements regarding chemiosmotic coupling hypothesis. Choose the correct option from the following:

I. There is a change in the permeability of the inner mitochondrial membrane towards adenosine diphosphate.

II. A proton gradient forms across the inner membrane.

III. The flow of proton through F_0 channel includes F_1 particle to function as ATP synthase and the energy of proton gradient.

IV. ADP is pumped out of the matrix into the intermembrane space.

A. I and II B. II and III

C. III and IV D. I and IV

16. Match the following columns.

Column I	Column II
A. Molecular oxygen	1. α-ketoglutaric acid
B. Electron acceptor	2. Hydrogen acceptor
C. Pyruvate dehydrogenase	3. Cytochrome-c
D. Decarboxylation	4. Acetyl Co-A

	A	B	C	D
A.	2	3	4	1
B.	3	4	2	1
C.	2	1	3	4
D.	4	3	1	2

17. Glycolysis term has originated from Greek words?

A. glycose and lysis B. glycos and lysis

C. glyco and lysis D. glucose and lysis

S.THIYAGARAJAN. M.SC., M.PHIL., B.Ed.,
PH: 9944664846
Magalingapurum, Pollachi.

18. Match the following columns.

Column I (Parts of Mitochondria)	Column II (Enzymes)
A. Outer membrane	1. Adenylate kinase, nucleotide diphosphokinase.
B. Inner membrane	2. Acetyl transferase, glycerophosphatase
C. Perimitochondrial space	3 Pyruvate dehydrogenase, aconitase
D. Matrix	4. Cytochrome oxidase dehydrogenase

	A	B	C	D
A.	2	1	3	4
B.	3	4	2	1
C.	2	4	1	3
D.	1	3	2	4

19. Match the compounds given in the column I with the number of carbon atoms present in them which are listed under column II. Choose the correct combination.

Column I	Column II
A. Succinyl CoA	1. 6C-Compund
B. Phosphoglyceraldehyde	2. 5C-Compound
C. Isocitrate	3. 4C-Compound
D. α -ketoglutarate	4. 3C- Compound

	A	B	C	D
A.	2	1	4	3
B.	3	4	1	2
C.	1	3	2	4
D.	3	1	2	4

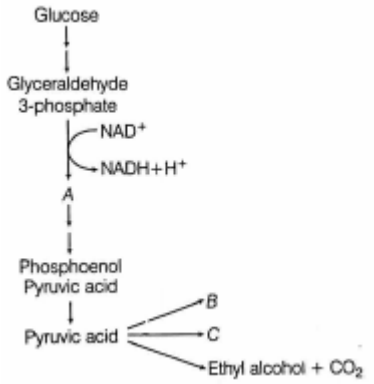
20. The net gain of ATP in Krebs' cycle is of

A. 2 ATP B. 8 ATP

C. 30 ATP D. 38 ATP

S.THIYAGARAJAN. M.SC., M.PHIL., B.Ed.,
PH: 9944664846
Magalingapurum, Pollachi.

21. Pyruvic acid is the end product of glycolysis. Pyruvic acid undergoes 3 metabolic fats of pyruvic acid under aerobic and anaerobic condition. Fill in the blanks by choosing the correct options.



A. A-3-phosphoglyceric acid, B-Krebs' cycle (acetyl Co-A) C-Lactic acid

B. A-Acetyl co-A, B-Citrate, C-Lactic acid

C. A-Fructose, B-Kinase, C-Krebs' cycle

D. A-Oxaloacetate, B-Krebs' cycle, C-Succinic acid

22. The incomplete degradation of organic substrates takes place in which of the following process?

A. Aerobic respiration B. Anaerobic respiration

C. Glycolysis D. All of these

23. In which one of the following processes CO_2 is not released?

A. Aerobic respiration in plants B. Aerobic respiration in animals

C. Alcoholic fermentation D. Lactate fermentation

24. Which of the following is the first product of Krebs' cycle?

A. Oxaloacetate B. Citric acid

C. Isocitrate D. Succinyl Co-A

25. Consider the following statements.

I. Yeast-Saccharomyces cerevisiae are used in baking industry.

II. Dough is kept in the cold temperature to proceed fermentation.

III. Carbon dioxide produced during fermentation Causes bread dough to rise by thermal expansion.

Choose the correct statement from option given.

A. I and II B. Only I

C. I and III D. Only II

S.THIYAGARAJAN. M.SC., M.PHIL., B.Ed.,
PH: 9944664846
Magalingapurum, Pollachi.

NEET - C14 - CELLULAR RESPIRATION - KEY

1. D	2. B	3. C	4. D	5. D
6. C	7. D	8. C	9. D	10. A
11. B	12. B	13. B	14. D	15. B
16. A	17. B	18. C	19. B	20. C
21. A	22. B	23. D	24. B	25. C