BIOLOGY

BOOKS - BAL BHARTI

RESPIRATION AND ENERGY TRANSFER

Use Your Brain Power

1. Why some reactions of glycolysis are reversible and some irreversible.

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2. Why is glycolysis considered as biochemical proof of evolution?

3. Why do athletes like sprinters have a higher proportion of white muscle fibre?

4. Do plant breathe like animals? If yes, how and why?

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Exercise Choose Correct Option

1. The reactions of the TCA cycle occur in..... .

A. ribosomes

B. grana

C. mitochondria

D. endoplasmic reticulum

Answer:

2. In eucaryotes the complete oxidation of a molecule of glucose results in the net gain of.

A. 2 molecules of ATP

B. 36 molecules of ATP

C. 4 molecules of ATP

D. 38 molecules of ATP

Answer:

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3. The intermediate between glycolysis and TCA cycle is

A. 2 molecule of ATP

B. 36 molecule of ATP

C. 4 molecule of ATP

D. 38 molecule of ATP

Answer:

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4. Do you know any step in the TCA cycle where there is substrate level phosphorylation. Which one?

A. $\alpha -$ ketoglutarate $\rightarrow$ succinyl CoA.

B. Succiny CoA $\rightarrow$ succinate

C. Succinate $\rightarrow$ fumarate

D. Fumarate $\rightarrow$ malate

Answer:

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Exercise Fill In The Blanks With Suitable Words

1. Fill in the blanks: Acetyl CoA is formed from.....and co-enzyme A.

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2. Fill in the blanks:In the prokaryotes..... molecules of ATP are formed per molecule of glucose oxidised.

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3. Glycolysis takes place in .....

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4. Fill in the blanks:$F_1 - F_0$ particles participate in the synthesis of..... .

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5. Fill in the blanks: During glycolysis.....molecule of $NADH$ are

formed.

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Exercise Answer The Following Questions

1. When and where does anaerobic respiration occur in man and yeast?

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2. Why is less energy produced during anaerobic respiration than in aerobic respiration?

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3. Where is the respiratory electron transport system located in a cell?

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4. Which compound is the terminal electron acceptor in aerobic respiration?

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5. What is RQ? What is its value for fats?

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6. What are respiratory substrates? Name the most common respiratory substrate.

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7. How are glycolysis, TCA cycle and electron transport chain linked? Explain.

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8. How would you demonstrate that yeast can respire both aerobically and anaerobically?

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9. What is the advantage of step wise energy release in respiration?

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10. What is ETS? Explain briefly?

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11. Why is Kreb's cycle referred to as an amphibolic pathway?

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12. Which of the following steps of aerobic respiration would be omitted when fatty acids are used as respiratory substrate?

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13. Which of the following steps of aerobic respiration would be omitted when fatty acids are used as respiratory substrate?

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14. Which of the following steps of aerobic respiration would be omitted when fatty acids are used as respiratory substrate?

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15. Which of the following steps of aerobic respiration would be omitted when fatty acids are used as respiratory substrate?

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Exercise Compare

1. Distinguish between the following. Photosynthesis and Respiration.

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2. Distinguish between Aerobic and anaerobic respiration :

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Exercise Differentiate Between

1. Differentiate between

Respiration and combustion.

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2. Glycolysis and Krebs cycle

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3. Differentiate between

Aerobic respiration and fermentation.

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