



BIOLOGY

BOOKS - CENGAGE BIOLOGY (HINGLISH)

RESPIRATION IN PLANTS

Exercises

1. RQ of fats and proteins is generally

A. 1

B. Less than 1

C. Greater than 1

D. Zero

Answer: B



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2. The value of RQ when the respiratory substance is poor in oxygen is

A. Zero

B. Infinity

C. Greater than 1

D. Less than 1

Answer: D



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3. The term protoplasmic respiration is used for the respiration of

A. Fats

B. Proteins

C. Carbohydrates

D. Organic acids

Answer: B



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4. Common pathways of aerobic and anaerobic respiration is

A. PPP

B. EMP

C. TCA cycle

D. ETS

Answer: B



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5. Anaerobic respiration in the presence of micro organisms is known as

A. Pasteurization

B. Decay

C. Fermentation

D. Putrification

Answer: C



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6. The term anaerobic respiration was coined by

A. Kostlychev

B. Henry Beevers

C. Dickens

D. Cruickshank

Answer: A



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7. In anaerobic glycolysis, net gain of ATP is

A. 2 ATP

B. 6 ATP

C. 8 ATP

D. 1 ATP

Answer: A



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8. Which is not a product of fermentation ?

A. CO_2

B. H_2O

C. ATP

D. Alcohol

Answer: C



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9. The site of EMP in eukaryotes is

A. Inner mitochondrial membrane

B. Cytoplasm

C. Mitochondrial matrix

D. Both (2) and (3)

Answer: B



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10. Pacemaker enzyme of glycolysis is

- A. Hexokinase
- B. Enolase
- C. Phosphofructokinase
- D. Pyruvate kinase

Answer: C



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11. The number of $NADH_2$ molecules produced in EMP is

A. 1

B. 2

C. 3

D. 4

Answer: B



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12. ETS in bacteria takes place at

A. Cell wall

B. Plasma membrane

C. Nucleus

D. Cytoplasm

Answer: B



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13. The path of glucose breakdown to pyruvic acid was discovered by

- A. Embden, Meyerhof, and Parnas
- B. Warburg and Dicken
- C. Sir Hans Krebs
- D. Calvin

Answer: A



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14. ATPs generated by $1NADH_2$ and $1FADH_2$ are, respectively,

A. 3,2

B. 2,3

C. 3,5

D. 5,3

Answer: A



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15. The connecting link between glycolysis and TCA cycle is

- A. Acetyl CoA
- B. OAA
- C. Pyruvic acid
- D. Citric acid

Answer: A



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16. Primary acceptor of TCA cycle is

A. OAA

B. Acetyl CoA

C. Citric acid

D. Pyruvic acid

Answer: A



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17. In TCA cycle, how many reduced co-enzymes are produced from one acetyl CoA ?

A. $3NADH_2$, $1FADH_2$

B. $2NADH_2$, $1FADH_2$

C. $4NADH_2$, $2FADH_2$

D. $5NADH_2$, $1FADH_2$

Answer: A



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18. The first 5-C acid in TCA cycle is

- A. Citric acid
- B. Succinyl CoA
- C. α -ketoglutaric acid
- D. Fumaric acid

Answer: C



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19. The number of total ATP generated in TCA cycle per acetyl CoA molecule is

A. 10

B. 12

C. 14

D. 24

Answer: B



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20. One molecule of $FADH_2$ upon oxidative phosphorylation yields

A. 2 ATP

B. 3 ATP

C. 4 ATP

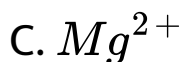
D. 5 ATP

Answer: A



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21. The element required for the activation of aconitase enzyme is



D. All of these

Answer: A



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22. A characteristic feature of ripening of some fruits (such as banana) is a sudden increase in respiration, which is known as

- A. Climatic
- B. Photorespiration
- C. Anthesis
- D. Climateric

Answer: D



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23. Substrate phosphorylation in TCA occurs when

- A. Succinic acid changes to fumaric acid
- B. Fumaric acid changes to malic acid
- C. Succinyl CoA changes to succinic acid
- D. Oxalosuccinic acid changes to ketoglutaric acid

Answer: C



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24. Mineral activator needed for the enzyme isocitrate dehydrogenase of TCA cycle is

A. Fe

B. Mg

C. Mn

D. Cu

Answer: A



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25. A single turn of Krebs cycle yields

A. $1FADH_2$, $2NADH_2$ and 1 ATP

B. $2FADH_2$, $2NADH_2$ and 2 ATP

C. $1FADH_2$, $3NADH_2$, and 1 ATP

D. $1FADH_2$, $1NADH_2$, and 1 ATP

Answer: A



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26. Fumarase enzyme converts

- A. Succinic acid to malic acid
- B. Succinic acid to fumaric acid
- C. Fumaric acid to malic acid
- D. Fumaric acid to citric acid

Answer: C



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27. ETS (electron transport system) is found in

- A. Cytoplasm

B. Mitochondrial matrix

C. Inner mitochondrial membrane

D. Outer mitochondrial membrane

Answer: A



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28. Number of multiprotein complexes in ETS in mitochondria is

A. 3

B. 4

C. 5

D. 6

Answer: A



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29. The complex concerned with oxidative phosphorylation in inner mitochondrial membrane is

A. Complex IV

B. Complex V

C. Complex III

D. Complex II

Answer: B



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30. Mobile electrons carriers in ETS in the mitochondrial membrane are

A. PQ, PC

B. CoQ, Cyt c

C. PQ, Cyt c

D. PC, CoQ

Answer: B



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31. Proton channel is found in

A. F_0 of ATPase

B. F_1 of ATPase

C. Cyt c

D. CoQ

Answer: A



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32. In prokaryotic cells, the number of ATPs generated from one glucose molecule is

A. 36

B. 38

C. 34

D. 32

Answer: B



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33. Inhibition of sugar breakdown due to the presence of O_2 under aerobic condition is called

A. Pasteur effect

B. Warberg effect

C. Gibbs effect

D. Kutusky effect

Answer: A



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34. Number of shuttles for transport extra mimtochondrial $NADH_2$ into mitochondrial is

A. 1

B. 2

C. 3

D. 0

Answer: B



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35. Which acid of TCA cycle is connecting the link with nitrogen metabolism ?

A. Succinic acid

B. Malic acid

C. α -ketoglutaric acid

D. Citric acid

Answer: C



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36. According to the chemi-osmotic mechanism for ATP synthesis given by P. Mitchell, the force/factor responsible for ATP synthesis is

A. Membrane potential across membrane

B. Proton motive force

C. Electron motive force

D. Redox potential

Answer: B



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37. The intermediate common to fatty acid and carbohydrate oxidation is

A. Pyruvate

B. Acetyl CoA

C. Oxaloacetate

D. Succinate

Answer: B



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38. From the oxidation of one molecule of palmitic acid (fatty acid), the number of ATP molecules gained are

A. 131

B. 129

C. 38

D. 142

Answer: A



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39. β -oxidation occurs in

A. Pea seeds

B. Gram seeds

C. Wheat grains

D. Cotton seeds

Answer: D



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40. Number of dehydrogenation in pentose phosphate pathways is

A. 2

B. 1

C. 3

D. 4

Answer: A



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41. ATP cycle was given by

A. Karl Lohman

B. Warburg and Lipman

C. Peter Mitchel

D. Fritz Lipman

Answer: D



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42. In cyanide-resistant respiration, the electrons are passed from ubiquinone to

A. Cyt b

B. Fe-S protein

C. Flavoprotein

D. FMN protein

Answer: C



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43. In PPP, the net gain of ATP molecules for one glucose molecule is

A. 34 ATPs

B. 35 ATPs

C. 36 ATPs

D. 38 ATPs

Answer: B



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44. A shunt to EMP or a safety valve is called

- A. Pentose phosphate pathways
- B. Cyanide resistance pathways
- C. ED pathway
- D. ETS

Answer: A



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45. Which is not an important intermediate of PPP (HMS) ?

A. $NADPH_2$,

B. Erythrose 4phosphate

C. Ribulose

D. Aromatic compounds

Answer: D



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46. The first step of ethyl alcohol fermentation requires

A. Dehydrogenation

B. Decarboxylation

C. FMN

D. Zn^{2+}

Answer: B



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47. Hexose monophosphate shunt is

- A. Pentose phosphate pathway or a set of reactions that bypasses the glycolysis and Krebs cycle routes for glucose oxidation in the cell.
- B. Conversion of glucose into pyruvic acid.
- C. The sum of all chemical transformations.
- D. The process by which starch is synthesized.

Answer: A



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48. The efficiency of respiration is approximately

A. 45 %

B. 50 %

C. 90 %

D. 30 %

Answer: A



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49. Cytochromes are

- A. Simple proteins
- B. S-containing proteins
- C. Conjugated proteins
- D. Cu-containing proteins

Answer: C



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50. The most appropriate reason for storing green-colored apples at low temperature is

A. The rate of photosynthesis is reduced.

B. Respiration and photosynthesis are completely inhibited.

C. The rate of respiration is reduced.

D. The rate of photosynthesis and respiration are reduced.

Answer: C



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51. Respiratory Quotient (RQ) is defined as

- A. Volume of O_2 /Volume of CO_2
- B. Volume of CO_2 / Volume of O_2
- C. Volume of O_2 / Volume of N_2
- D. Volume of N_2 /Volume of CO_2

Answer: B



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52. Pyruvic acid is formed during

- A. Krebs cycle
- B. Glycolysis
- C. Ornithine cycle
- D. Calvin cycle

Answer: B



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53. The correct sequence of electron acceptor in ATP synthesis is

- A. cyt a , a_3b , c
- B. cyt b , c , a , a_3
- C. cyt b , c_3 , a , a_3
- D. cyt c , b , a , a_3

Answer: B



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54. Which one of the following contains copper besides iron ?

- A. Cytochrome -f
- B. Cytochrome oxidase
- C. Plastoquinone
- D. Cytochrome - c_1

Answer: B



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55. Where does the formation of acetyl CoA from pyruvic acid take place ?

A. Mitochondria

B. Chloroplast

C. Cytoplasm

D. Golgi body

Answer: A



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56. The number of ATP molecules produced by electron transport system from Krebs cycle intermediates in a single turn is

A. 11

B. 14

C. 12

D. 16

Answer: A



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57. In anaerobic respiration, the number of ATP molecules produced are

A. 1

B. 2

C. 3

D. 8

Answer: B



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58. In which of the following steps of Krebs cycle, CO_2 is evolved ?

A. Isocitric acid \rightarrow Oxalosuccinic acid

B. Oxalosuccinic acid \rightarrow α -ketoglyutaric acid

C. Succinic acid \rightarrow Fumaric acid

D. Malic acid \rightarrow Oxaloacetic acid

Answer: B



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59. Which of the following enzymes is not used in Krebs cycle ?

A. Aconitase

B. Decarboxylase

C. Aldoase

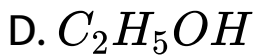
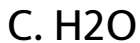
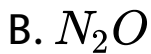
D. Fumarase

Answer: C



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60. The end product of fermentation is



Answer: D



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61. Gluconeogenesis is the

- A. Formation of glucose from other than carbohydrate
- B. Formation of glycogen
- C. Breakdown of glucose
- D. Formation of ammonia from glucose

Answer: A



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62. β -oxidation takes place in

A. Matrix of mitochondria

B. Cell cytoplasm

C. Inter mitochondrial chamber

D. Ribosomes

Answer: C



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63. In TCA cycle, the conversion of succinyl CoA to succinic acid requires

A. Acetyl CoA + GTP + iP

B. Acetyl CoA + GDP + iP

C. CoA + GTP + iP

D. GDP + iP

Answer: D



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64. Yeast is used in the formation of

A. Ammonia

B. Alcohol

C. Curd

D. Petrol

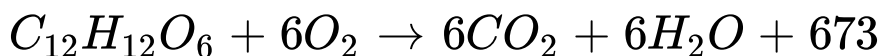
Answer: B



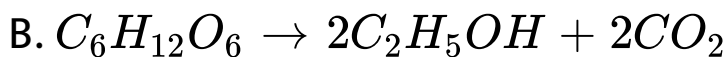
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65. Fermentation is represented by the equation

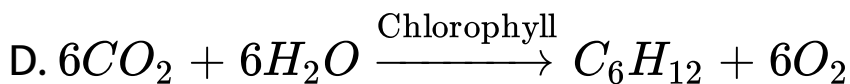
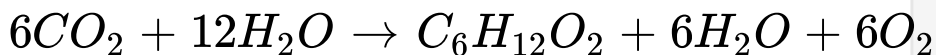
A.



kcal



C.



Answer: B



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66. Which of the following is formed during respiration ?

A. O_2 (oxygen)

B. CO_2 (carbon dioxide)

C. NO_2 (nitrogen dioxide)

D. SO_2 (sulfur dioxide)

Answer: B



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67. The pyruvic acid formed in glycolysis is oxidized to CO_2 and H_2O in a cycle called

A. Calvin cycle

B. Hill reaction

C. Kreb's Cycle

D. Vitamins

Answer: C



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68. The end product of glycolysis is

A. Glucose

B. Fructose

C. Pyruvic acid

D. Ethyl alcohol

Answer: C



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69. R.Q. is more than 1 in case of

A. Fat

B. Fructose

C. Glucose

D. Organic acid

Answer: D



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70. The total yield in one Krebs cycle is

A. $3FADH_2$, $2NADH_2$, $1ATP$

B. $2FADH_2$, $2NADH_2$, $2ATP$

C. $2NADH_2$, $1FADH_2$, $2ATP$

D. $3NADH_2$, $1FADH_2$, $1ATP$

Answer: D



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71. How many ATP will be produced during the production of 1 molecule of acetyl CoA from 1 molecule of pyruvic acid ?

A. 3 ATP

B. 5 ATP

C. 8 ATP

D. 38 ATP

Answer: A



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72. The sequence of cytochromes is

A. Cyt, a, b, c, a_3

B. Cyt, b, c, a, a_3

C. Cyt b, a, a_3 , c

D. Cyt b, c, a_3 , a

Answer: B



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73. Cytochrome is a

- A. Mg pyrrole ring
- B. Hemoprotein
- C. Fe porphyrin ring
- D. Alloy of nichrome

Answer: B



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74. Krebs cycle takes place in

A. Mitochondrial matrix

B. Cytoplasm

C. Lysosome

D. Nucleus

Answer: A



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75. Cellular respiration occurs in

- A. Chloroplast
- B. Golgi bodies
- C. Mitochondria
- D. Nucleus

Answer: C



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76. If volume of CO_2 liberated during respiration is more than the volume of O_2 used, then the respiratory substrate will be

A. Fat

B. Sucrose

C. Glucose

D. Organic acid

Answer: C



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77. Krebs cycle begins with reaction

- A. Citric acid + Acetyl CoA
- B. Oxaloacetic acid + Pyruvic acid
- C. Oxaloacetic acid + Citric acid
- D. Oxaloacetate + Acetyl CoA

Answer: D



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78. Hydrolysis of fat yields

A. Fatty acids

B. Fatty acids and glycerol

C. Mannose and glycerol

D. Maltose and fatty acid

Answer: B



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79. Respiratory quotient of which diet is less than unity ?

A. Carbohydrate

B. Fats

C. Organic acid

D. Sugar

Answer: B



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80. The richest energy compound is

A. Creatinine phosphate

B. Protein

C. Carbohydrate

D. Fat

Answer: D



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81. The stage up to which glycolysis and fermentation is common is

A. Dihydroxyacetone

B. 3-Phosphoglyceraldehyde

C. Pyruvate

D. Glucose-6-phosphate

Answer: C



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82. The respiratory quotient of carbohydrate is

A. Unity

B. Greater than unity

C. Less than unity

D. Equal to five

Answer: A



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83. During the conversion of pyruvic acid into acetyl CoA, pyruvic acid is

A. Oxidized

B. Reduced

C. Isomerized

D. Condensed

Answer: A



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84. In Krebs cycle,

A. ADP is converted into CO_2

B. Pyruvic acid is converted into CO_2 and

H_2O

C. Glucose is converted into CO_2

D. Pyruvic acid is converted into ATP

Answer: B



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85. Incomplete breakdown of sugar in anaerobic respiration forms

A. Glucose and CO_2

B. Alcohol and CO_2

C. Water and CO_2

D. Fructose and water

Answer: B



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86. Significance of Krebs cycle is the

A. Synthesis of ATP

B. Synthesis of amino acid

C. Synthesis of chlorophyll

D. All of the above

Answer: D



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87. In plants, respiration takes place

A. During day only

B. During night only

C. All 24 hours

D. At dusk

Answer: C



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88. Glycolysis takes place in

A. Cytoplasm

B. Nucleus

C. Plastid

D. Mitochondria

Answer: A



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89. In respiration, the largest amount of energy is produced in

A. Anaerobic respiration

B. Krebs cycle

C. Glycolysis

D. None of the above

Answer: B



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90. Which of the following is not an intermediate in Krebs cycle ?

A. Acetic acid

B. Succinyl coenzyme-A

C. Malic acid

D. Citric acid

Answer: A



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91. Alcoholic fermentation takes place in the presence of

A. Maltase

B. Zymase

C. Amylase

D. Invertase

Answer: B



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92. The site of EMP pathway in the cell is

A. Peroxisome

B. Cytoplasm

C. Matrix of mitochondria

D. Inner membrane of mitochondria

Answer: B



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93. The steps of respiration are controlled by

A. Substrates

B. Enzymes

C. Hormone

D. Bile juice

Answer: B



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94. Enzymes of electron transport system are present in

A. Inner mitochondrial membrane

B. Matrix

C. Intermembranous space

D. Endoplasmic reticulum

Answer: B



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95. Which of the following connects glycolysis to Krebs cycle ?

A. Acetyl CoA

B. Ribozyme

C. Cytochrome oxidase

D. N-acetyl glucosamine

Answer: A



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96. Pyruvic acid is the end product of

A. Krebs cycle

B. Electron transport system

C. Photosynthesis

D. Glycolysis

Answer: D



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97. Which of the following accepts terminal electron during aerobic respiration ?

A. Molecular O_2

B. Molecular H_2

C. Molecular CO_2

D. $NADPH_2$

Answer: A



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98. Glycolysis occurs in

A. Cytoplasm

B. Nucleus

C. Mitochondria

D. Both (1) and (3)

Answer: A



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99. Which one of the following is the first step glycolysis ?

A. Breakdown of glucose

B. Phosphorylation of glucose

C. Conversion of glucose into fructose

D. Dehydrogenation of glucose

Answer: B



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100. How many ATP molecules are released when 1 molecule of glucose is oxidized in our liver cells ?

A. 36

B. 38

C. 2

D. 8

Answer: B



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101. The sequence of food materials consumed during starvation is

A. Carbohydrates → Fats → Proteins

B. Carbohydrates → Proteins → Fats

C. Proteins → Fats → Carbohydrates

D. Fats → proteins → Carbohydrates

Answer: A



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102. How many ATPs are produced during the glycolysis of one molecule of glucose ?

A. 4

B. 2

C. 36

D. 38

Answer: B



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103. Final electron acceptor in ETS is

A. NAD

B. FAD

C. Oxygen

D. Hydrogen

Answer: C



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104. Respiratory cycle where $NADH_2$ are produced is

A. Calvin cycle

B. Krebs's cycle

C. EMP pathway

D. HMP shunt

Answer: C



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105. Most of the enzymes which participate in Krebs cycle are found in

- A. Matrix of mitochondria
- B. Inner membrane of mitochondria
- C. Outer membrane of mitochondria

D. Stroma of chloroplast

Answer: A



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106. The connecting link between glycolysis and Krebs cycle is

A. Acetyl CoA

B. CoQ

C. Coenzyme

D. CoA

Answer: A



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107. The process of oxidative phosphorylation takes place in

A. Mitochondria

B. Chloroplasts

C. Ribosomes

D. Cytoplasm

Answer: A



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108. Glycolysis is the conversion of

- A. Glucose to glycogen
- B. Glycogen to glucose
- C. Glucose to pyruvic and
- D. Glucose to citric acid

Answer: C



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109. Anaerobic respiration takes place in

A. Ribosome

B. Nucleus

C. Cytoplasm

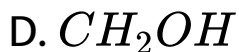
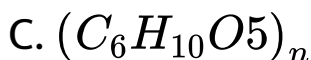
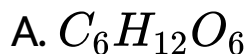
D. Vacuole

Answer: C



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110. Which of the following is the product of glucose fermentation by yeast ?



Answer: B



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111. Fermentation is an

- A. Anaerobic respiration
- B. Incomplete oxidation
- C. Excretory process
- D. None of the above

Answer: B



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112. Organelles which are regarded as power house of the cell and in which oxidative reactions of the respiratory process takes place are known as

- A. Chloroplast
- B. Ribosomes
- C. Mitrochondria
- D. Endoplasmic reticulum

Answer: C



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113. In which of the following , respiration in the absence of oxygen also takes place ?

A. Man

B. Potato

C. Yeast

D. Spirogyra

Answer: C



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114. CO_2 is liberated during

- A. Ascent of sap
- B. Respiration
- C. Photosynthesis
- D. Transpiration

Answer: B



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115. ATP stands for which of the following ?

A. Adenine tetraphosphate

B. Adenine triphosphate

C. Adenosine diphosphate

D. Adenosine triphosphate

Answer: C



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116. Glycolysis occurs in

A. Vacuoles

B. Nucleolous

C. Mitochondria

D. Cytoplasm

Answer: D



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117. The number of ATP produced during the production of 1 molecule of acetyl CoA from 1 molecule of pyruvic acid is

A. 3 ATP

B. 8 ATP

C. 36 ATP

D. 38 ATP

Answer: A



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118. The energy produced by one ATP molecule is

A. 7.6 kcal

B. 12 kcal

C. 20 kcal

D. 10 kcal

Answer: A



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119. Which of the following show anaerobic respiration ?

A. Earthworms

B. Rabbit

C. Echinoderms

D. Tapeworms

Answer: D



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120. It is believed that the organisms first inhabited earth's surface were

A. Autotrophs

B. Mixotrophs

C. Chemoautotrophs

D. Heterotrophs

Answer: C



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121. Pyruvic acid before combining with the oxaloacetic acid of Krebs cycle becomes

A. Citric acid

B. Acetoacetic acid

C. Cis-aconitic acid

D. Acetyl CoA

Answer: D



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122. Anaerobic respiration takes place in

A. Ribosome

B. Nucleus

C. Cytoplasm

D. Vacuole

Answer: C



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123. What is the energy coin of a cell ?

A. DNA

B. RNA

C. ATP

D. Minerals

Answer: C



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124. The process of oxidative phosphorylation takes place in

A. Mitochondria

B. Chloroplasts

C. Ribosomes

D. Cytoplasm

Answer: A



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125. RQ of which diet is less than unity ?

A. Carbohydrate

B. Fats

C. Organic acid

D. Sugar

Answer: B



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126. Pyruvic acid is the end product of which process ?

A. Krebs cycle

B. Calvin cycle

C. Pentose phosphate pathway

D. Glycolysis

Answer: D



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127. 1 molecule glucose, 6 molecules of O_2 and 38 ADP combine to form $6H_2O$, $6CO_2$, and

A. 38 molecules of ATP

B. 28 ATP

C. 38 ADP

D. 28 ADP

Answer: A



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128. The number of ATP obtained at the end of Krebs cycle

A. 2 ATP

B. 4 ATP

C. 8 ATP

D. 38 ATP

Answer: D



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129. Aerobic respiration is how many times useful than anaerobic respiration

A. 2

B. 8

C. 9

D. 18

Answer: C



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130. Respiration is which type of process ?

A. Cataboile

B. Metabolic

C. Anabolic

D. None

Answer: A



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131. RQ is represented by

A. O_2 / CO_2

B. CO_2 / O_2

C. $V_2 / (V_2 - V)$

D. O_2 taken in

Answer: B



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132. Which is the site of Krebs cycle ?

A. Chloroplast

B. Golgi body

C. Mitochondria

D. Endoplasmic reticulum

Answer: C



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133. Succinyl Co-A is related to

A. Krebs cycle

B. Calvin cycle

C. Glycolate cycle

D. HMP-cycle

Answer: A



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134. According to chemiosmotic of P. Mitchell (1978), ATPs are synthesised on membranes due to the

A. Proton gradient

B. Electron gradient

C. Osmosis

D. From H_2SO_4

Answer: A



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135. A reduction of NADP to $NADP.H_2$ is associated with

A. ETS-pathway

B. HMP-shunt

C. Calvin cycle

D. Glycolysis

Answer: B



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136. Cut surface of fruits and vegetables often become dark because

A. Dirty knife makes it dark

- B. Oxidation of acid in the presence of trace
of iron from the knife makes it dark
- C. Dust of the air makes it dark
- D. None of the above

Answer: B



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137. Mineral activator needed for the enzymes
Aconitase of TCA cycle is

A. Mn

B. Fe

C. Mg

D. Cu

Answer: B



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138. An example of competitive inhibition of an enzyme is the inhibition of

- A. Succinic dehydrogenase by malonic acid
- B. Cytochrome oxidase by cyanide
- C. Hexokinase by glucose-6 phosphate
- D. Carbonic anhydrase by carbon dioxide

Answer: A



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139. If the temperature is increased above $35^{\circ}C$,

- A. Rate of decline of respiration will be earlier than decline of photosynthesis
- B. Rate of decline of photosynthesis will be earlier than decline of respiration
- C. Both decline simultaneously
- D. Both do not show any fixed pattern

Answer: A



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140. In hexose monophosphate shunt the number of CO_2 molecules evolved is

- A. Same as in glycolysis
- B. Less than glycolysis
- C. More than glycolysis
- D. Much less than glycolysis

Answer: B



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141. Conversion of pyruvic acid into ethyl alcohol is mediated by

- A. Phosphatase
- B. Dehydrogenase
- C. Decarboxylase and dehydrogenase
- D. Catalase

Answer: B



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142. The commonest living, which can respire in the absence of O_2 is

A. Fish

B. Yeast

C. Potato

D. Chlorella

Answer: B



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143. The formation of Acetyl CoA from pyruvic acid is the result of its

- A. Reduction
- B. Dehydration
- C. Phosphorylation
- D. Oxidative decarboxylation

Answer: D



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144. Which of the following is link between carbohydrate and fat metabolism ?

A. CO_2

B. Acetyl Co-A

C. Pyruvic acid

D. Citric acid

Answer: B



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145. Pyruvate dehydrogenase complex is usedc
in converting

- A. Pyruvate to glucose
- B. Glucose to pyruvate
- C. Pyruvic acid to lactic acid
- D. Pyruvate to acetyl Co-A

Answer: D



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146. The first compound of TCA cycle is

A. Oxalo succini acid

B. Oxalo acetic acid

C. Citric acid

D. Cis aconitic acid

Answer: C



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147. Which of the following is coenzyme -II ?

A. NAD

B. NADP

C. FAD

D. None of the above

Answer: B



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148. Where does the synthesis of enzyme occur in a cell

- A. Inside the nucleus
- B. In lysosomes
- C. On the surface of ribosome
- D. Inside the vacuole

Answer: C



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149. Excess of ATP inhibits the enzyme

- A. Phosphofructokinase

B. Hexokinase

C. Aldolase (Lyases)

D. Pyruvate decarboxylase

Answer: A



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150. End product of glycolysis is

A. Citric acid

B. Glyceraldehyde

C. Phosphoglyceraldehyde

D. Pyruvic acid

Answer: D



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151. Firstg reaction in pentose phosphate pathway is

A. Oxidation of glucose-6-phosphate

B. 6-phospogluconic acid

C. Ribose-5-phosphate

D. Fructose-5-phosphate

Answer: A



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152. Oxidation of one molecule of glucose in aerobic respiration results in production of

A. 36 ATP molecules

B. 38 ATP molecules

C. 3 ATP molecules

D. 15 ATP molecules

Answer: B



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153. In manufacture of bread, it becomes porous due to release of CO_2 by the action of

A. Yest

B. Bacterial

C. Virus

D. Protozoans

Answer: A



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154. How many ATP molecules are produced by the aerobic oxidation of one molecule of glucose ?

A. 2

B. 4

C. 38

D. 34

Answer: C



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155. In which one of the following do the two names refer to one and the same thing ?

A. Krebs cycle and Calvin cycle

B. Tricarboxylic acid cycle and citric acid cycle

C. Citric acid cycle and Calvin cycle

D. Tricarboxylic acid cycle and urea cycle

Answer: B



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156. In alcohol fermentation,

A. Triosephosphate is the electron donor,
while acetaldehyde is the electron acceptor.

B. Triosephosphate is the electron donor,
while pyruvic acid is the electron acceptor.

C. There is no electron donor.

D. Oxygen is the electron acceptor.

Answer: A



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157. In glycolysis, during oxidation, electrons are removed by

A. Molecular oxygen

B. ATP

C. Glyceraldehyde

D. NAD^+

Answer: D



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158. For retting of jute, the fermenting microbe used is

- A. *Helicobacter pylori*
- B. Methanophilic bacteria
- C. *Streptococcus lactis*
- D. Butyric acid bacteria

Answer: D



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159. During which stage in the complete oxidation of glucose are the greatest number of ATP molecules formed from ADP ?

A. Conversion of pyruvic acid to acetyl CoA

B. Electron transport chain

C. Glycolysis

D. Krebs cycle

Answer: B



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160. The deficiencies of micronutrients not only affects growth of plants, but Iso vital functions such as photosynthetic and mitochondrial

electron flow. Among the list given below, which group of three elements shall affect the most, both photosynthetic and mitochondrial electron transport ?

A. Cu, Mn Fe

B. Co, Ni, Mo

C. Mn Co, Ca

D. Ca, K, Na

Answer: A



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161. The chemiosmotic theory of ATP synthesis in the chloroplast and mitochondria is based on

- A. Proton gradient
- B. Accumulation of K ions
- C. Accumulation of Na ions
- D. Membrane potential

Answer: A



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162. Curing of tea leaves is brought about by the activity of

- A. Viruses
- B. Fungi
- C. Bacteria
- D. Mycorrhiza

Answer: C



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163. Which of the following statements regarding mitochondrial membrane is NOT correct ?

A. The inner membrane is highly convoluted forming a series of infolding.

B. The outer membrane resembles a sieve.

C. The outer membrane is permeable to all kinds of molecules.

D. The enzymes of the electron transfer chain are embedded in the outer membrane.

Answer: D



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164. How many ATP molecules could maximally be generated from one molecule of glucose, if the complete oxidation of one mole of glucose to CO_2 and H_2O yields 686 kcal and the useful chemical energy available in the high energy phosphate bond of 1 mole of ATP is 2 kcal ?

A. 57

B. 3

C. 2

D. 30

Answer: A



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Assertion Reasoning Questions

1. Assertion :- 2,4 DNP is an uncoupling agent in ETS.

Reason :- It is soluble in lipid.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

Answer: B



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2. Assertion :- Glucose 6-phosphate dehydrogenase deficiency impairs PPP (HMS).

Reason :- It is an X-linked recessive disorder.

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

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

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

Answer: B



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3. Assertion :- The RQ of maturing fatty seeds are greater than 1.

Fats are preferred as energy fuel.

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

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

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

Answer: C



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4. Assertion :- In cellular respiration, ETS electron movement is a downhill journey.

Reason :- Electrons move from high redox potential to low redox potential to low redox potential.

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

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

C. If Assertion is false, but Reason is true

D. If both Assertion and Reason are false.

Answer: A



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5. Assertion :- Succinyl CoA is the precursor of pyrrole group containing compounds.

Reason :- Succinyl CoA is an intermediate of TCA cycle.

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

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

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

Answer: B



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Archives

1. The overall goal of glycolysis, Krebs cycle, and the electron transport system is the formation of

- A. Nucleic acids
- B. ATP in small stepwise units
- C. ATP in one large oxidation reaction
- D. Sugars

Answer: B



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2. All enzymes of TCA cycle are located in the mitochondrial matrix except one which is located in the inner mitochondrial membrane in eukaryotes and in cytosol in prokaryotes. This enzyme is

A. Succinate dehydrogenase

B. Lactate dehydrogenase

C. Isocitrate dehydrogenase

D. Malate dehydrogenase

Answer: A



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3. Which one of the following mammalian cells are not capable of metabolizing glucose to carbon dioxide aerobically ?



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4. A competitive inhibitor of succinic dehydrogenase is

A. μ -ketoglutarate

B. Malate

C. Malonate

D. Oxalocetate

Answer: C



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5. The chemiosmotic coupling hypothesis of oxidative phosphorylation proposes that adenosine triphosphate (ATP) is formed because

- A. A proton gradient forms across the inner membrane
- B. There is a change in the permeability of the inner mitochondrial membrane towards adenosine diphosphate (ADP)
- C. High-energy bonds are formed in mitochondrial proteins
- D. ADP is pumped out of the matrix into the intermembrane space

Answer: A



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6. In germinating seeds, fatty acids are degraded exclusively in the

- A. Peroxisomes
- B. Mitochondria
- C. Proplastids
- D. Glyoxysomes

Answer: D



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7. Aerobic respiratory pathway is appropriately termed

A. Anabolic

B. Catabolic

C. Parabolic

D. Amphibolic

Answer: D



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8. The energy -releasing process in which the substrate is oxidized without an external electron acceptor is called

A. Aerobic respiration

B. Glycolysis

C. Fermentation

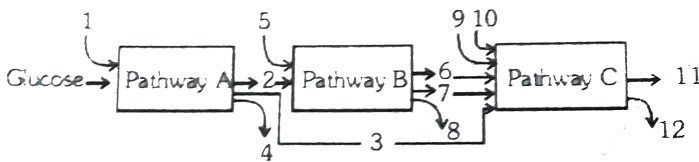
D. Photorespiration

Answer: C



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9. 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 $FADH_2$

Answer: B



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

- A. Glucose-6-phosphate
- B. Fructose 1,6-bisphosphate
- C. Pyruvic acid
- D. Acetyl CoA

Answer: D



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11. In which one of the following process CO_2 is not released ?

- A. Aerobic respiration in plants
- B. Aerobic respiration in animals
- C. Alcoholic fermentation
- D. Lactate fermentation

Answer: D



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12. Chromatophores take part in

- A. Respiration
- B. Photosynthesis
- C. Growth
- D. Movement

Answer: B



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