

Practice Quiz Answers : Dr. Balliett : "I am only cranky around my husband."

## GLYCOLYSIS

1. Ebden Meyerhoff Pathway
2. Cytoplasm
3. RBC's
4. NADH, Lactate
5. Glucose  $\rightarrow$  2 Pyruvate + 2 ATP + 2 NADH + 2 H<sub>2</sub>O
6. It cannot leave the cell
7. Liver
8. Glucose 6 phosphatase
9. Phosphofruckokinase (PFK)
10. ATP & Citric Acid
11. Hexokinase, Isomerase, Phosphofruckokinase (HIP!)
12. Fat (undergo lipogenesis)
13. Pyruvate
14. Isomerase
15. G3P + NAD + P  $\rightarrow$  Pyruvate + 2 ATP + H<sub>2</sub>O + NADH
16. Phosphoglycerate kinase (PGK), and Pyruvate Kinase
17. Enolase
18. NAD<sup>+</sup>
19. Accumulate, Lactate
20. Pyruvate  $\rightarrow$  Pyruvate Decarboxylase  $\rightarrow$  Acetaldehyde  $\rightarrow$  Alcohol DH  $\rightarrow$  Ethanol

## PENTOSE PHOSPHATE PATHWAY

21. Synthesis of NADP and Ribose 5P
22. Ribose
23. Nucleotides, DNA, RNA
24. Newborns, Pregnant women, Athletes, Adolescents
25. Fatty acids, cholesterol, steroid hormones, and bile salts (Lipid Related Products)
26. Cycled back into glucose
27. Pentose Phosphate Shunt, Hexose Monophosphate Shunt
28. Redox (irreversible), and Inter-conversion (reversible)
29. 6P Gluconate dehydrogenase, NADP, Ribulose 5p, CO<sub>2</sub>
30. Ribulose 5P  $\leftarrow \rightarrow$  Ribose 5P



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## KREBS CYCLE

31. TCA Cycle, Citric Acid Cycle
32. Mitochondria
33. Energy production and biosynthesis
34. O
35. Carb rich
36. 3NADH, FADH<sub>2</sub>, 2CO<sub>2</sub>, GTP
37. Aspartate and Glutamate
38. Succinyl CoA, Porphyrins
39. Lactate, amino acids, Cori & Glucose Alanine Cycle
40. Glucose → Pyruvate → mitochondria → Acetyl Coa + CO<sub>2</sub>
41. Triglycerides → Fatty acids via carnitine into mitochondria → Acetyl CoA
42. Amino acids enter as intermediates into the krebs
43. Glucose, CO<sub>2</sub>
44. Glucose production
45. Aconitase
46. TPP (B<sub>1</sub>), FAD (B<sub>2</sub>), NAD (B<sub>3</sub>), Lipoic Acid, Coenzyme A (Pantothenic Acid)
47. FAD, NAD
48. Water
49. Succinate thiokinase OR Succinyl CoA Synthase
50. Allosteric
51. Glutamate, Glutamin : SGPT
52. Asparate, Asparagine : SGOT or AST
53. Liver (SGPT, Let's Pee!)
54. Heart (SGOT, Oh! That's sweet.)
55. 12 (NADH 3x3=9, FADH 1x2=2, GTP 1x1=1)
56. 36 or 38 depending on the mode of transport
57. Allosteric regulation of Pyruvate DH & Isocitrate DH, availability of OAA
58. Availability of NAD<sup>+</sup>, Pyruvate, CoA, and Insulin
59. High levels of NADH and Acetyl CoA, Aerobic exercise, fasting fat metabolism
60. OAA, rate of TCA cycle
61. ATP and NADH
62. Citric acid buildup
63. PFK is inhibited, increase in triglycerides and adipose tissue



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## BIOENERGETICS

64. Fats(9), Carbohydrates(4), Proteins(4), Alcohol(7)
65. Phosphoenolpyruvate, Phosphocreatine, phosphoglycerate, pyrophosphate, Acetyl CoA, ATP
66. Free Energy
67. Phosphate anhydride
68. Inner mitochondrial membrane
69. Reduced nucleotides
70. H<sub>2</sub>O and O<sub>2</sub>
71. Pump protons out
72. Protein gradient
73. FADH<sub>2</sub>, Succinate DH
74. Ubiquinone
75. Transfers electrons from Complex I & II to Complex III
76. CoQ10
77. Ubiquinone – Cytochrome C Reductase
78. Complex III (C & B), and Complex IV(A)
79. Small Heme Protein, Shuttle electrons from Complex III to Complex IV
80. Cytochrome C Oxidase : Copper
81. O<sub>2</sub>, H<sub>2</sub>O
82. Complex I, III, and IV
83. Proton motive force
84. ATP Synthase
85. Electrochemical potential across inner mitochondrial membrane
86. Rotenone, Antimycin, CO and cyanide
87. Succinate-Q Reductase (Succinate DH)
88. NADH-Q Reductase (NADH DH)
89. Mother
90. Statins

MAKE SURE YOU CAN DRAW THE KREB'S CYCLE, GLYCOLYSIS, AND THE ELECTRON TRANSPORT

