

Practice Quiz Questions : Dr. Balliett : "Yeah, she's eating celery... That's good for you. Yeah..."

## GLYCOLYSIS

1. What is another name for glycolysis?
2. Where does glycolysis occur?
3. What cell presents the best model of glycolysis?
4. Pyruvate + \_\_\_\_\_ yield \_\_\_\_\_, forming the beginning of the cori cycle.
5. What is the glycolysis overall pathway?
6. What is significant of glucose 6 phosphate?
7. What structure is the only one whom can breakdown glucose 6 phosphate?
8. What enzyme can breakdown glucose 6 phosphate?
9. Which enzyme determines whether glycolysis will be turned on?
10. What turns off glycolysis?
11. What are the enzymes of the investment stage?
12. DHAP prefers to become \_\_\_\_\_.
13. G3P prefers to become \_\_\_\_\_.
14. DHAP & G3P can be interconverted by \_\_\_\_\_.
15. What is the overall reaction of the yield stage?
16. Which enzymes of the yield stage require ADP?
17. What enzyme produces water?
18. What does G3P dehydrogenase require?
19. Pyruvate does not \_\_\_\_\_, and may be converted into \_\_\_\_\_.
20. What are the steps of yeast anaerobic glycolysis?

## PENTOSE PHOSPHATE PATHWAY

21. What is the purpose of the Pentose Phosphate Pathway?
22. What is the most important 5 carbon sugar?
23. What is ribose 5P needed to make?
24. Who may be frequently using the PPP?
25. NADPH is needed for the synthesis of what?
26. If the pentose are not used, what is their fate?
27. What is the PPP's other names?
28. What are the stages of the PPP? Which are reversible?
29. What is the enzyme of the redox stage? What does it need, produce, and release?
30. The enzyme isomerase is used in the inter-conversion stage to convert what?



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## KREBS CYCLE

31. What is the Kreb's cycle also known as?
32. Where does the TCA cycle occur?
33. What is the purpose of the TCA cycle?
34. How many ATP are made directly from the TCA cycle?
35. Glucose goes to fat following a \_\_\_\_\_ meal.
36. Starting with Acetyl CoA, what total resultant products?
37. Kreb's biosynthesis is the source of nonessential amino acids. Name two which are formed.
38. Heme synthesis involves \_\_\_\_\_ to \_\_\_\_\_.
39. Glucose from \_\_\_\_\_ and \_\_\_\_\_ are produced when fasting/starving. What cycle is this from?
40. What are the steps to turn glucose into Acetyl CoA?
41. What are the steps to turn triglycerides into Acetyl CoA?
42. What are the steps to turn Amino acids into Acetyl CoA?
43. Carbons derived from fat cannot become \_\_\_\_\_, instead are released as \_\_\_\_\_.
44. There is no net \_\_\_\_\_ from Acetyl CoA.
45. What enzyme forces fatty acids to stay as fat?
46. PDH and  $\alpha$ -keto glutarate DH need what substances/vitamins?
47. Succinate DH requires \_\_\_\_\_, while other DHs require \_\_\_\_\_.
48. What does the coenzyme Fumerate require?
49. What is the Succinyl CoA enzyme?
50. Isocitrate DH is a \_\_\_\_\_ enzyme.
51. What amino acids enter as alpha-ketoglutarate? Via what enzyme?
52. What amino acids enter as OAA? Via what enzymes?
53. SGPT is primarily a \_\_\_\_\_ enzyme.
54. SGOT is primarily a \_\_\_\_\_ enzyme.
55. What is the total ATP produced by Acetyl CoA and the Electron transport chain?
56. Glycolysis yields how many ATP?
57. How is the TCA regulated overall?
58. What increases the rate of pyruvate DH?
59. What decreases the rate of pyruvate DH?
60. A high carbohydrate diet increases \_\_\_\_\_ and therefore \_\_\_\_\_.
61. Isocitrate DH is inhibited by \_\_\_\_\_ and \_\_\_\_\_.
62. A high carbohydrate diet with inactivity will result in increases of \_\_\_\_\_.
63. What results from high levels of citric acid?



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## BIOENERGETICS

64. What are the caloric value of the 4 basic foods?
65. What are the high energy compounds?
66. \_\_\_\_\_ energy is equal to or greater than ATP is a high energy compound.
67. What is a high energy bond?
68. Cytochrome chain occurs on the \_\_\_\_\_.
69. Fuels are oxidized to \_\_\_\_\_.
70. Electrons from reduced nucleotides are transferred to \_\_\_\_ and \_\_\_\_\_.
71. In the ET, energy is used for what purpose?
72. What is discharged by ATPase?
73. For carbohydrates, \_\_\_\_\_ enters complex II via \_\_\_\_\_(an enzyme).
74. What begins the common pathway?
75. What does Ubiquinone do?
76. What is another name for Ubiquinone?
77. What is the enzyme of Complex III?
78. Where are the cytochromes found?
79. What is cytochrome C and what does it do?
80. What is the Complex IV enzyme and what is it dependent upon?
81. Complex IV transfers electrons to \_\_\_\_\_ to form \_\_\_\_\_.
82. What pumps proteins out of the mitochondria?
83. What produces ATP?
84. Influx of protons is possible via \_\_\_\_\_.
85. What do the proton pumps cause?
86. What are the complex uncouplers?
87. What is the enzyme of Complex II?
88. What is the enzyme of Complex I?
89. Where does the mitochondrial genome inherited from?
90. What drug blocks CoQ10?

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

