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Example Exam 4 Answers – S12

v1.1

Gluconeogenesis

1. D – (ii) and (iv).
2. E – Fructose-2,6-bisphosphate.
3. A – Pyruvate carboxylase
4. D – 2
5. C – 4

Glycogen Metabolism and Pentose Pathway

6. E – Adenylyl Cyclase.
7. E – Phosphorolysis.
8. B – The enzyme becomes persistently active.
9. E – It phosphorylates phosphorylase kinase.
10. D – UDP-glucose.
11. C – 2.
12. B – Provide NADPH for biosynthetic metabolism.
13. A – The oxidative reactions are active, NADPH and ribose-5-phosphate are consumed in biosynthetic metabolism, so the non-oxidative reactions are inactive.

The TCA Cycle

14. A – C, E, D, A, B.
15. B – Oxidative decarboxylation.
16. A – To reoxidize reduced lipoamide.
17. D – Glyoxylate.
18. D – Fe-S clusters
19. E – 4Fe-4S; aconitase; coordinate the substrate
20. B – Fluorocitrate; aconitase
21. D – (ii), (iii) and (v)
22. E – Oxidative decarboxylation; α-ketoglutarate dehydrogenase.
23. A – Pyruvate dehydrogenase.
24. C – It is a substrate level phosphorylation.
25. D – (i), (iii) and (iv)
26. D – Oxaloacetate is used in the next reaction which has a negative ΔG.
27. E – 10
28. C – To replenish cycle intermediates that are used for biosynthesis.
29. B – 0.5

Electron Transport and Oxidative Phosphorylation

30. E – H^+ and H_2
31. A – Oxygen.
32. C – NADH dehydrogenase and quinol oxidase.
33. B – Complex 1 and complex 2
34. C – NADH and succinate
35. D – Complex IV.
36. D – positive; reduction; acceptor
37. E – Complex IV.
38. B – Protons are translocated by proton pumps in the enzyme.
39. A – Ubiquinone.
40. D – Copper.
41. E – A & B
42. E – Twol one; two.
43. E – 10.
44. A – two
45. C – NADH
46. A – 1, 3 & 4
47. A – c and γ.
48. D – The F_1 component is located in the inter-membrane space.
49. D – ATP synthesis continues in the presence of an uncoupler.
50. E – The proton motive force.

Gluconeogenesis (Ch 22, Part 1):
Will be on exam 4 for Dr. Spiro
Was on exam 3 for Dr. Candas

Pentose Pathway is NOT on the exam!

"True friends are like the stars on cloudy nights. You can't always see them, but they're always there."

Problem Set #4: Due Wednesday 12/12 at 5:00PM
Owl Assignments: Due Wednesday 12/12 by 5:00PM

Exam #4 Review: Sunday 12/9 at 1:00PM – SLC 1.102
Exam #4: Friday 12/14 at 8:00AM (Candas)
Saturday 12/15 at 11:00AM (Spiro)