1→4. These should be in your notes from lecture

5. a. 2 → 2 consumed in the preparation phase & 4 produced in payoff phase

b. 2.

c. 1,3 BPG + PEP.

6 a. 4

b 4 Acetyl-CoA is made of 2 carbons, so 2 CO_2 are produced for each acetyl CoA

7. Vinegar:

$C_2H_4O_2$ (+1(4) = +4, −2(2) = −4)

Carbon: $2X + 4 - 4 = 0$

$X = 0$

CO_2 (2(−2) = −4)

Carbon: $X - 4 = 0$

$X = +4$

In the reaction: $2C^0 \rightarrow 2C^{+4} + 8e^-$

$0 \rightarrow +8$ — need 8 e^- here!

Sucrose:

$C_{12}H_{22}O_{11}$ (+1(22) = 22, −2(11) = −22)

$C = 0$

$12C^0 \rightarrow 12C^{+4} + 48e^-$

$0 \rightarrow +48$

Glycerol: $2C_3H_8O_3 \rightarrow 6CO_2$ (+1(8) = +8, −2(3) = −6)

Carbon: $3X + 8 - 6 = 0$

$X = -2/3$

$6C^{-2/3} \rightarrow 6C^{+4}$

$-4 \rightarrow +24 + 28e^-$

(or 14 per glycerol)

8. a. $C_6H_{12}O_6$ ethanol C_2H_6O (+6, -2)

C = 0 (as shown in class)

Carbon: $2x + 6 - 2 = 0$

$x = -2$

CO_2 : $C = +4$

reaction: $1\,C^0 \longrightarrow \underbrace{4\,C^{-2}}_{\text{2 ethanol w/ 2 carbons each}} + 2\,C^{+4}$

total charge $0 \longrightarrow -8 + 8 = 0$

- same charge on both sides
- NO e^- produced!

b. $C_6H_{12}O_6 \longrightarrow 2\,C_3H_{12}O_3$

all carbons are zero here, so no e^- produced!

That's the thing with anaerobic respiration - O_2 is not around to accept e^-, so there cannot be any e^- produced!